THE GENESIS
OF
THE WORLD





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By Samuel Gott

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THE
Divine History
OF THE
GENESIS
OF THE
WORLD
Explicated & Illustrated.

Gotss Juven. Sat. 14. *Philosophi*
Tradidit arcano quodcunq; volumine Moses.

LONDON,
Printed by *E. C.* & *A. C.* for *Henry Eversden*, and are to be sold at his Shop under the *Crown* in *West-Smithfield*, next *Duck-Lane*, 1670.

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THE WORLD

OF THE

GENESIS

OF THE

DIVINE HISTORY

Premonition to the Reader.

HE *who included* Homer's Ilias *in a Nutshell, made a very good Kernell for it, if the Brevity in Writing was not compensated with as great Obscurity, and difficulty in Reading. Wheras in this Divine History, we have the* Genesis, *and System of the whole World, in one Leaf, yea one Page, delineated as in a Mapp; not without sufficient Clearnes, as I shall shew in my Explications. And as God hath left farther Inquiry into Particulars to Human Ingeny and Industry, I accordingly expatiate in my Illustrations, still keeping as close to the Text, as I may; for,* longius a Verbo, longius a Vero. *Wherin though I cannot be as Brief as I would, yet I have studied as much Clearnes as I could, without Diagramm or Sculpture; and purposely repeat some more difficult Conceptions, that others may better understand them: which yet I do not expect they should presently embrace, becaus I know that I could not so suddenly satisfy myself concerning them: and whosoever would so satisfy himself, must throughly read, and as throughly consyder the whole* Series. *The Manuscript hath suffered many Expunctions and Interlineations, which rendred it not so Legible; and my absence from the Press permitted some faults to escape in Printing. However I expose it, such as it is, among my own Countrimen, from whom I willingly expect many Learned Observations, and Critical Reflections, which shall help me to perfect, and prepare it for another Language. The exquisite Poets in the time of* Augustus (*as I find in* Ovid) *used first to recite privately one to another: and I remember Mr.* Selden *told me, that he and* Heinsius *used to communicate Notes toward some of their Works.* Schola Salerni, Collegium Conimbricense, *and others, wrote in Common: which certeinly is a very great advantage; where many collect the Materials, and one is the Composer and Architect of the Work, and then all review and rectify it. But I, who live alone in the Country farr from* Athens, *must proceed otherwise, and as Inferior* Animals, *first exclude an Embryonical* Ovum, *which may be afterward hatched into a more perfect* Fœtus. *In the mean time, becaus* Errata *are not observed untill they be printed, nor usualy rectified untill the Book be read; and then it is too late; I have heer prenoted such as are more material, that the Reader may rectify them before-hand, by under-lining them, or by under-pointing, or pricking. Besides which, there are many other Literal faults, especialy in Capital Letters intended only for more Emphatical Words, Tautographys,*

elf Interpunctions, and the like, which he may easily correct, Oculo currente ; *and be pleased to pardon both my own, and the common Infirmitys of Printing*——aliter non fit, Amice, liber.

PAge 2. Line 33. *be.* Read *be the.* p. 4. l. 3. *changing.* r. *chanting.* l. 28. *Affection.* r. *Affectation.* p. 5. l. 12. *Mercurius* r. *Mercurys.* p. 34 l. 11. *Præjudicate.* r. *Predicate.* p. 49. l. 17. *Triangle.* r. *Triangle, or Delta.* p. 53. l. 23. *all.* r. *also.* p. 62. l. 15. *of.* r. *as.* l. 36. *Parallogramm.* r. *Parallelogramm.* p. 64. l. 35. *uever.* r. *never be.* p. 71. l. 3. *all Maserial.* r. *Elementary.* p. 76. l. 8 *more.* r. *more or.* p. 82. l. 10. *one.* r. *own.* p. 86. l. 39. *at.* dele. p. 87. l. 18. *clear.* r. *clear it.* p. 88. l. 38. *mid.* r. *mid be.* p. 96. l. 30. *Notion.* r. *Motion.* p. 99. l. 24. *Body.* r. *Body be.* p. 103. l. 2. *such.* r. *such as.* p. 105. l. 8. *Exue.* r. *Exuct.* l. 13. *as.* r. *as to.* p. 123. l. 6 *whatsoever.* r. *whatsoever, which.* p. 132. l. 36. *Meditately.* r. *Mediately.* p. 143. l. 25. *Spirits.* r. *Species.* p. 148. l. 7. *as we have.* dele. l. 14. *Maturely.* r. *Mutualy.* p. 149. l. 28. *Introduction.* r. *Introsuction* p. 153. l. 26. *were.* r. *were made.* p. 167. l. 32. *it.* r. *it being.* p. 172. l. 29. *Night then by Day.* r. *Day then by Night.* p. 174. l. 19. *Barr.* r. *Burr.* l. 24. *at.* r. *as.* p. 177. l. 25. *of.* r. *by.* p. 191. l. 34. *somwhat.* r. *so not.* p. 192. l. 13. 37. *somwhat.* r. *so not.* p. 201. l. 10. *Seen.* r. *even.* p. 202 l. 32. *at.* r. *as.* p. 215. l. 5. *which.* r. *which is.* p. 238. l. 22. *Various.* r. *Variations.* p. 239. l. 10. *from.* r. *upon.* l. 35. *thither.* r. *hither.* p. 245. l. 16. *therefore.* r. *therefore called.* p. 248. l. 20. *amitt.* r. *emitt.* p. 250. l. 11, 17, 26. *Vapid* r. *Vappid.* p. 257. l. 10. *and.* r. *and as.* p. 313. l. 18. *or therabout.* dele. p. 315. l. 27. *not.* r. *not only.* p. 322. l. 15. *but* dele. p. 324. l. 28. *as* dele. p. 340. l. 14. *not.* r. *not so.* p. 337. l. 10. *Starrs.* r. *Starrs more.* l. 27. *more Rare.* r. *common.* p. 339. l. 35. *Angels.* r. *Angels or God.* p. 344. l. 13. *whereby.* r. *thereby.* p. 346. l. 37. *leap.* r. *stirr.* p. 351. l. 16. *Art.* r. *Art.* p. 357. l. 32. *when.* r. *whence.* p. 372. l. 33. *wheras.* dele.

THE

TO THE WORLD.

THe Title beſpeaks the Dedication of this diſcourſ of the World to the World; which if it were Animal, as *Plato* fanſied, would moſt freely acknowledg and ſubſcribe to the Divine Hiſtory of its own Creation: But I write to the Animate and Intelligent World of Mankind, both preſent and future; and more ſpecially to the Chriſtian World, (which is now almoſt the whole World of Learning) but moſt particularly to the Britiſh World, whoſe Language I therefore ſpeak. Now though Men in theſe latter Ages of the World ſeem to forget the Original Creation therof ſo many Thouſand Years paſt, certainly *Adam* the firſt Man, who was immediately Created by God, was very Conſcious of his own Creation; nor could he by his Fall loſe this Natural Knowledg, more than of being a Man: and moſt probably he delivered this great Tradition to his Poſterity; who alſo reteined it, while they could reckon themſelves in ſucceſſion, as *Enoch* the Seventh, and *Noah* the Tenth from *Adam*. But afterward in or about the Fourteenth Generation; when *Nimrod* the Mighty Hunter and his Impious faction began to build the Tower of *Babel*, (whereupon enſued the Confuſion of Languages) this Knowledg alſo began to be Confounded; and thenceforth remained with the Primitive Language only in the family of *Heber*, the Father of the Hebrews (in whoſe days the Earth was divided when his eldeſt Son *Peleg* was born) and in his Sacred Seed after him. And from the Hebrews living in *Chaldæa* the Chaldæans firſt derived their Philoſophy; and ſo after them the Egyptians, and Phœnicians; and from them the Græcians; mingling it with

 their

their ſeveral Superſtitions and Idolatries. And as *Joſephus* obſerveth, *Nimrod* firſt taught his Babylonians to contemn Gods Power and Providence; which he could not do without a denial of the Creation. Whence the Chaldæans began to worſhip the Creature, or Created Nature, inſtead of God the Creator: but principally the Sun, and Fire, as the Supreme and moſt Beneficial Element. The Egyptians who would alſo have their National Deity, did Idoliſe Water rather than Fire; induced thereunto by a Gratitude to their Great Benefactor the River *Nilus*. The Phœnicians, Græcians, Romans, and generaly all the more Weſtern Nations, have worſhiped all the Elements, under ſeveral Names, and in the ſeveral Forms and Images wherewith they pleaſed to Inveſt them; deducing them all from *Cœlum* and *Terra*, or Heaven and Earth, (which the Chineſes ſtill worſhip) But *Pan* and *Proteus*, whereby they repreſented Matter and Motion, were by all eſteemed *Dii Minorum Gentium*. This Antient Theogony is alſo Recorded and Celebrated by the Poets. Which though afterward the Athenian Philoſophers did more ſtrictly examin, yet the Tradition of a *Chaos* and Creation did very long continue among them: but they ſuppoſed the Creation of the World by one Chief God to have been Eternal like himſelf, with certain Revolutions of Time, and Tranſmigrations of Spirits, Eternally Circulating and Changing by Perpetual Generation and Corruption; believing the Lying Records of Egyptian Antiquity, from whom alſo *Pythagoras* learned his Philoſophy, and fanſied I know not what Harmony of the Spheres: with many ſuch Fictions, which he by his own *Ipſe Dixit* pleaſed to Affirm, and Impoſe as *Credenda* on his Diſciples. And *Plato*, being partly a Follower of his Sect, and partly a Maſter of another, generally reteined and refined this Philoſophy. But *Ariſtotle* rejecting all Matters of Faith, both Divine, and Human, and examining all things only by Reaſon, deſcended lower even to a firſt Matter, affirming it, and the *Potentia* thereof, to be Common Principle of all Material things. Upon which falſe Foundation, and alſo his Compliance with popular Idolatry, almoſt all his other Errors are grounded; though otherwiſe I eſteem him the greateſt Maſter of Reaſon among all Pagan Philoſophers: and his Errors are not Dangerous being now ſo well known to all. But as *Moſes* is the only Divine and true Philoſopher; ſo of them

all

all I acknowledg *Aristotle* to be his best Commentator. *Epicurus* departed from both these ways of Knowledg, regarding Sens more than either Reason or Faith. Whereas these three, being all, and the only Ways of Human Knowledg a Philosopher should accordingly make use of them all: and therefore all Heathen Philosophy, wanting the Divine Light of Faith, could never yet produce any Complete System of the World, nor give any true and satisfactory Account therof. And this Universal Dissatisfaction begat the last of Sects which was Scepticism, or a professed Denying or Doubting all things whatsoever: admitting no Testimony or Evidence either of Faith, Reason, or Sens. But though Doubting may be a good Disciple, yet certainly it can be no Master of Philosophy; and if it be Affected and Resolved is the very Contradiction therof, and Oppugner of all Knowledg, both Divine, and Human, Speculative, and Practical: and however some may esteem it Caution in Philosophy, it is plainly Libertinism in Morality, and Infidelity in Theology: and any Dogmatical Error or Inconvenience can hardly be greater than Total Scepticism, which is as Utter Darkness, and the State of Desperation, the Bottomless pit, and *Vorago* of all Knowledg and Practice. Now as this was formerly the Progress of Heathenish Philosophy, so since Christianity Illuminated the World, yet through the Natural Darkness and Corruption of Human Understanding, it hath again had the same Revolutions. For so first Platonical Philosophy, which *Porphyrius*, *Plotinus*, *Jamblichus*, and others very much rectified and refined by the Spiritual Light of Christianity, was by them opposed against it. Also *Philo Judæus*, and *Origen*, and some of the Christian Fathers seem to have some Savor therof. Afterward the Schoolmen generally referring Matters of Faith to Scripture, and examining Nature by Reason, rather embraced the Peripatetical Philosophy, which hath long continued, untill in this last Age, some others, though they can discover nothing which the Athenian Wits had not Invented before them, yet reviving and renewing old Errors, like Fashions, relaps again to Epicurism, in one kind or other, of Atoms, or Corpuscles, or the like, And when this Humor hath lasted as long as it did formerly, we may expect Scepticism to succeed: and indeed I suspect that we are already in the very Confines therof. Now though Wan-

ton Wits think they may thus dally with Opinions as they pleaſe; yet, as it is moſt truly ſaid, *Studia abeunt in Mores*: and ſo *Virgil* very aptly introduceth Drunken *Silenus* changing the Epicurean Opinion, but Grave *Anchiſes* more ſoberly Platoniſing. Certainly their Novell Doctrine of Matter and Motion doth much Embaſe the Immaterial Spirit of Man, and render it more Groſs and Senſual, and unfit for Spiritual and Divine Contemplations. And though I believ ſome of the Aſſertors therof to be as far from Atheiſm as my ſelf, yet I muſt freely profeſs that the Aſſertion tendeth toward it, and was by Heathens Improved to the Denial of a Creation; and I appeal to every Reader whether it doth not Induce ſome Suſpicion therof in himſelf; yea I ſuppoſe this to be chiefly that which renders it ſo acceptable and agreeable to the Corrupt Minds of Men; and the Writers therof themſelvs ſeem to be ſomewhat Conſcious herein, while they make their uſual Apologies, and need to tell the World they are no Atheiſts. Thus alſo by affirming Accidents and Qualities to be no Real things, they make both Virtue and Piety to be only Notions.

O Virtus colui te ut Rem, at tu Nomen inane es!

And if they could alſo prove the Reward therof, and Puniſhment of Impiety and Vice (which all muſt accordingly perceiv and feel) to be only Notional, and not Real; they ſhould thereby deliver up all Mankind to a Reprobate ſenſ, or rather Inſenſibility and Indiſtinction of any Good or Evill. And their Opinion of Univerſal Nature is like that of *Cæſar*: *Respublica Inane Nomen.* Beſides how prejudicial ſuch Contempt of Antiquity, and of all Authority, and the Affection of Novelty and Innovation, may be to Church or State, I leav to wiſe Politicians, Certainly all Chriſtian Academies and Schools of Literature ſhould deeply reſent ſuch Novell Attempts, which Profeſſedly ſubvert all the Antient foundations of Learning; whereby formerly the Barbarous World was taught both Arts and Manners, and a ready way prepared for Chriſtian Religion; and wherupon ſo fair a Superſtructure hath been raiſed (to which even theſe Novelliſts ow their Education and Inſtruction) and a farther Progreſs might ſtill have been made, if it were not Obſtructed by themſelvs; and Young Wits led away into an Inextricable

Inextricable Labyrinth of Matter and Motion; and the *Magnum Inane* of Vacuity, and at last plunged into the Abyss of Perpetual Scepticism. I have no Petulant Humor, yet it may exceed the Meekness and Patience of my Great Master *Moses*, to hear some Christians affirm the very Essences and Formalities of all Elementary, Vegetative, yea even sensitive Natures, to be only Matter and Motion: as *Aaron* said of his Materials; *I cast them into the fire, and there came out this Calf*: and so to set up several Figures of things, as the Jews did the Figures which they had made; and Heathenish Idolaters their Idols and Images. Wheras indeed it is rather the Art of a Statuary, than of a Philosopher, thus to make *Mercurius Ex quolibet ligno*: or as he who having only an *Hercules* of Wax in his shop, when one came to buy of him a *Mercury*, could presently turn his Beard into a *Galerus*, his Club into a *Caduceus*, and his Buskins into *Talaria*; and so he might as well have made thereof a *Jupiter*, *Juno*, *Venus*, Man, Beast, or Tree, or as we say *Quidlibet ex quolibet*: Which yet shou'd be only Wax varied. Thus our new Philosophers, not acknowledging all those several Primitive Natures which God in his Infinite Wisedom pleased to Create, like Etymologists, can derive one thing from another so far as scarcely to leav any Primitives. *Cartacean* Philosophy, which describes the World in Paper otherwise then God hath made it to be in Nature, beginning, *Cogito, Ergo Sum*, and so proceeding, *Cogito, Ergo Est*: as though becaus the Operation doth indeed prove the Essence of the Cogitant, it did therefore also prove the Real Entity of any thing Cogitated: and yet this is all the Argument it can afford us to prove that First and Fundamental Truth, That there is a God, *Cogito esse Deum, Ergo Est*. Whereas the most Judicious and Ingenious Father, long before had Invented the first Argument, when disputing with a Sceptike, he first proves that he Is, because he doubts whether he Is or not; and because he is a Creature, thereby also proves that there is a God the Creatour: whom I shall rather chose to follow than any such Neophytes; who, when God saith in the Beginning he made Heaven and Earth, say he made only Matter and Motion; and professing that they had deliberated and tried to deduce all this Spectable World from a *Chaos*, or from Matter only diversified by its own Motion, Figure, and the like; have asserted it to be Matter; whereas God expresly declareth that he Produced

ced it out of a *Chaos* in the Six Days Works: and who make *Sol* and the Planets, and the Starrs to be the Centers and Foundations of all the *Vortices* of Matter and Corpuscles about them; whereas the whole Æther, Air, Water, Earth, and Vegetatives, were made in the Three first days before them. Whereupon I may very truly and safely pronounce; *Aut hæc non est Scriptura, aut ista non est Philosophia.* For mine own part I must here profess, that having long since studied Philosophy in the University, and read over several Philosophers, both Antient, and Modern, I could never find a satisfaction in any of them: and if I had not reflected on this Divine History, should have been tempted, as others, to Invent some new Philosophy suitable to mine own Fansy: For now he is no Philosopher who will not attempt to make a new Philosophical World, and produce his Module therof; shewing how it might be best made, and with least Charges: but certainly it is most Ridiculous and Impious thus to presume that God must therefore have made the World according to our Module, becaus we judge it best; rather than acknowledge that to be best which he hath made, becaus he who made it is Infinitely Wiser than us. Wherefore to find out how God made the World, I had recourse to his Word, reading over this first Chapter of *Genesis* again and again; and also many Commentators, in whom generaly (besides the first Article of our Creed concerning God the Maker of Heaven and Earth) I found more of *Aristotle* than of *Moses*; (yea even Translators seem to incline that way) but the Cabalistical Rabbins, and Scholastical Philosophers, by their Jewish, and Heathenish Interpretations, have so Confounded and Obnubilated this Divine Light, that almost all Christians fear to approach it; and seem rather to dread and adore it at a distance as some Inscrutable Mystery: and some think they greatly favor Scripture by restraining it to Theology and Morality, and not intitling it to Natural Philosophy; and so, as it were going backward, cover it with the Mantle of their Indulgence, that the Philosophical Nakedness thereof may not appear to themselves or others. Whereas considering for what end this Divine History of Created Nature was writ, and being sufficiently confident of the Intrinsecal Verity, and Extrinsecal Evidence thereof, I adventured to look into the Naked Simplicity of the Text, and endeavored first to discover the plain and true System of the World, which God the Creator hath described therin,

therin, and thereby reveled unto us. Which I have accordingly expreſſed in my Explications; being only a brief Philoſophical Paraphraſe upon the Text: and yet while I thus Explicate the Text by my Paraphraſe, I ſtill ſubmit my Paraphraſe to be judged by the Text: and I therefore ſet theſe Explications, as a Partition, or *Cancelli*, between the Divine Word and my Human Illuſtrations therof: which I have alſo deduced from the Created Nature, as the Counterpart of Scripture; and have hearkned to the Voice therof, as to the *Echo* of the Creating Voice of God. Nor do I diſſent from Pagan Philoſophy *Animo Contradicendi*, or to flatter Chriſtianity (which is far above it) but ſhall alſo retein any thing of Truth that I have found therin; and all advantages therof, either Platonical Speculations, Peripatetical Ratiocinations, or Epicurean Senſations, yea even Sceptical Caution it ſelf: and am Dogmatical only in ſuch *Theſes* which according to the Law that I impoſe on my ſelf, I ſhall firſt prove by the Concurrence of Divine Authority, Human Argument, and Senſible Experiment: and if I knew any more ways of Probation, ſhould not decline, but moſt gladly embrace them. Neither do I thus offer any thing to the World wherof I have not firſt ſatisfied my ſelf after ſo long trial and ſtrict examination; wher in I could never yet find any thing conſiderable, either of Reaſon, or Senſ, which I could not fairly reconcile to the Divine Authority of the Text. Alſo I have adventured to propound many *Hypotheſes*; which though I dare not ſo confidently Aſſert, yet I ſhould not Inſert them, if I did not eſteem them very Probable: for indeed it is the moſt proper, and a ſufficient Task for any Philoſopher, to Inquire only what God hath Created: and I ever reputed it a great Vanity in any who preſume to go farther, and will alſo offer to ſhew what he might have Created: not without ſome Inſinuation of what one moſt Profanely Expreſſed, Thar if he had ſtood at Gods elbow when he made the World, he could have ſhewed him how to have made it better: as though whatſoever Hypothetical Natures, or Poetical Worlds, they pleaſe to fanſy and deſcribe,

Natura aut facit hæc quæ legis, aut faceret.

Poſſibility is Indefinite, and to purſue it Vain and Endleſs. It is not Abſolutely Impoſſible, that this, or any other Book, might be

be Printed by the Casual Concurrence of Letters, Ink, and Paper, without any Composer, or Printer; yet if any should therefore write a large Discourse therof, or of any other such like *Hypotheses*, I think it might well deserv to be placed in *Rablais* his Library. But though I shall carefully exclude any such Improbable Trifles, yet I doubt not but that among so many supposed Probabilities, I may run into some Errors, and many *Errata* in Terms of Art, and such other *Peccadillos*, which may prove Scandalous and Offensive to Weaker Minds, who regard Words more than Things; and may be matter enough of Disgrace and Disparagement to the Captious, who though they can find no fault in *Venus* her self, will Carp at her Sandal, or something about her. And I am Conscious that I may be more liable hereunto, being no Mathematician, Astronomer, Chymist, or other Artist whatsoever; but one among the Laity of Mankind, having only two Books which I regard, Scripture, and Nature: and though any may eafily bite through my Human Infirmity, yet he shall break his Teeth at these Bones, *Fragili quærens illidere dentem Offendet Solido*—— However I am sufficiently secure, being already where I would be; that is, below Fame, and above Infamy: and as I do not Superscribe my Name to gain the one, so neither do I Conceal it to avoid the other: but either is as Indifferent to my self as it is to my Pen to write it, only it is somewhat less not to write it. Nor will I presume to add any thing to Divine Authority, professing it to be my chief Designe to Exalt it as the only *Statera* of Truth, both Natural, and Supernatural; and as we Eminently call it Scripture and Bible, so it is indeed the Writing of all Writings, and Book of all Books; whereby they are to be Judged; and *If they speak not according to this Word, it is becaus there is no Light in them.* As a worthy Friend, laying his hand on the Bible, once truly said to me, If this Book were not Extant in the World, there were nothing Certain and Infallible left to Mankind: wherof we have sufficient Evidence, not only in Scepticism, but even in all other Philosophy, of which there are so many several Sects and Opinions, or indeed only *Hypotheses*; for I cannot conceiv that the Authors therof were ever satisfied in themselvs, or could expect to satisfie others thereby; but vented them as some things which they esteemed Possible, or the best of them only as fair

Probabilities

Probabilitys. Wheras this foundation laid in Scripture is as ſure as Nature it ſelf; which both are the Work and Word of the ſame Divine Creator; and every Superſtructure rightly built therupon ſhall ſtand. Now though I may not preſume to be any ſuch Maſter-builder; yet I think it a very great Work effected, if I may reduce others to this Fundamental Syſtem, and provoke them to build upon it; as I have begun, and offered this rude Eſſay: and though they ſhall pleaſ to Demoliſh my whole Fabrike, and themſelvs to Erect any other, and lay upon it *Gold*, *Silver*, *Pretious Stones*, *Wood*, *Hay*, *Stubble*, or what they liſt, I have my Deſigne; which is to Aſſert this to be the only true Foundation of Natural Philoſophy, as well as of Theology, and Morality. *And the Fire ſhall try every mans Work of what ſort it is.* And ſo I not only Dedicate this my Work unto the World (as indeed every Writer writes to all by making his Writing Publike) but alſo I Appeal unto it, and make every Reader my Judg: for I do not preſume to teach the World; nor ſhall I, as others, term it the People that knoweth not the Law of Nature; for though it conſiſt of many Heads, and almoſt as many Sentences, yet I do not find but that the laſt Reſult, and that wherin they Acquieſce, is Truth: whoſe common Fate in the World is firſt to be gazed on, and perhaps derided and oppugned, and at laſt after farther ſcrutiny to be enterteined and embraced; and the Fate of Error contrary therunto, firſt to be Applauded and Admired, and ſo received without any Pratike, and afterward when it is more ſtrictly examined, to be Rejected and Exploded. Thus Truth is the Daughter of Time; and as Time is the beſt Critike, ſo I eſteem *Homer*, *Virgil*, and ſuch others, to have been the beſt of Poets, and *Plato*, and *Ariſtotle*, the beſt of Philoſophers; becauſ their Works have ſo long ſurvived; wheras there are only ſome Fragments of *Epicurus* now remaining, as broken and minute as his Corpuſcles or Atoms, Certeinly Scripture is both moſt Antient, and alſo moſt Intire. Nor can I ſuppoſe that the Diſcovery of any conſyderable Natural Truth, or Profitable Good to Mankind, hath been renounced, or will ever be loſt by them. Wherefore now O Chriſtian World! who art a Collection not only of Men, but of Chriſtians, Judg thou according to both Capacitys, whether Scripture be not the trueſt Comment that ever was made upon Nature: and that thou maiſt rightly diſcern between them, ſet the ſhort Syſtem of the Divine *Geneſis* therof by all or any other whatſoever.

Conferis toto cum ſparſa Volumina mundo;
Illa Homines dicas, hæc docuiſſe Deum.

And now after ſo many Chriſtian Ages, let it be once Determined, whether this be a true Hiſtory of the Creation, or not; and if it be, (as moſt undoubtedly it is) let us no longer be bereaved of ſo great a Treaſure, which hath hitherto I know not how been not only hid under ground, but trampled on by the feet of men. Nor let any Elude and Enervate it by the Imputation of Popularity, whereby even Popular Underſtandings may learn Divine Philoſophy; as the Pſalmiſt profeſſeth, that thereby he had acquired *More Underſtanding then all his Teachers.* Nor let us reſigne not only our Faith, but alſo our own Reaſon to others, becauſ they pleaſ to abandon theirs, and ſcoffingly call it Logical, or Metaphyſical, or the like; which are the Acqueſts of thoſe Noble Arts and Sciences, whereby we excell Brutes, Barbarians, and themſelvs. Nor may they juſtly term this a Prejudice againſt them; for how do they Prejudg? who Appeal to the whole World, or the Great Univerſity of Mankind; and as good Scribes bring forth out of their Treaſure things New and Old: doing herein like Galeniſts, who willingly admit and add to their Diſpenſatorys any Chymical Experiments which are ſound and uſeful (and to ſuch Phyſicians all wiſe Patients commit their Bodys rather then to Empirikes) Or are they prejudiced? who affirm nothing but what they prove by all the ways of Probation, Authority, Argument, and Experiment. For to what Judg can we Appeal but the World, or to what Law but Faith, Reaſon, and Senſ? and may we not rather ſuſpect the Prejudice to ly in Novelty and Party, and a new Sect of men, who admit only ſenſ, and yet will not be Judged by that, unleſs it ſpeak their Senſ? But as I have not pawned the Authority of mine own Name, upon which I know I could borrow very little; ſo I only beg of others; that neither any Paſſionate Amours which they may have for any Man or his Opinions, nor the Inebriating Fanſys of their own Spirits, nor any pretended Monarchy or Monopoly of Knowledg, may be by them Oppoſed to Truth; for *Magna eſt Veritas & prævalebit*: and I doubt not but that *Scriptum eſt*, and *Probatum eſt*, will by their own Intrinſecal Value, without any Image or Superſcription, paſs Current through the

the whole Christian World. But let us all rather Consult together the Advancement of true Knowledg, and the Real Benefits of Mankind; both in Speculation, and Action: Wherof the Speculative Part doth properly belong to Scholes and Academys, who, if they shall make this Divine History of the Creation to be their *Symbolum Philosophicum*, shall need no other Fundamentals; nor have they any better way to preserv their Disciples from these new Philosophical Romances of *Mundus Alter, & Idem*. And as it hath been much wished by Wise men that Scholars would season their Studys with more of Common Life and Civil Conversation (the want wherof hath been the Scandal and Scorn of Learning) so particularly Academical Philosophers should hearken more to Experiments, which though it be not fit for themselvs to Practice, yet they may Inquire of Chymists and Mechanikes, and be Informed therof by them, to whom the Practical Part doth properly belong. And Mechanikes may be also much Assisted and Directed by Philosophers, with many Rules and Regular Proportions; whereby they may be Instructed, and also Cautioned from attempting Impossibilitys, or any thing Impracticable; as the Philosophers Stone, Perpetual Motion, or Fire, and the like; and also much Advantaged in the Attempts of Possibilitys; as if the Doctrine of Local Motion of Bodys were more fully cleared, and all the Variations therof, not only according to Distances from the Center, Multiplications of Wheels, Pulleys, Leavers, and the like, and all the several Situations and Positions therof; but also all the Mysterys of Increments and Decrements of Velocity, Consistent Strength, Elasticity, Pressure and Nonpressure, Preventions of Vacuity, and the like, were ascerteined unto them, it might greatly help them in contriving their Machins and Engines. It hath been observed that though Speculative Philosophy hath not much Advanced in these last Ages of the World, yet there hath been a great Improvement of Mechanical Arts: but I conceiv that thus both might grow up together. Nor is a Mechanike so mean a Title in Human Society as is commonly reputed; Certeinly the End of all these Speculations is Practice, which doth most Immediately promote the Good of Mankind. And if I should endeavor any such Profitable Inventions, I had rather be assisted therin by a Corporation of Mechanikes, then any College of Philosophers: and I would kiss that mans Hands, yea his

Feet, who ſhould Collect and Publiſh an exact and faithful Hiſtory of Artificial Experiments, not only Chymical and Curious, but Mechanical, and of all Trades and Artifices: which together with the Hiſtory of Extraordinary Natural *Phanomena*, are very great *Deſiderata*, and would be of very much Uſe and Improvement. But Inventions, as I conceiv, are rather ſtrange Fates and Felicitys; and ſome *Magnalia* therof have proved as great Treaſures to the World as the Indian Mines, which certeinly the Diſcovery made by *Columbus* did comprehend. Yet as they are not of Ordinary Production, ſo neither only Chances, as we term them; but Extraordinary Providences of God in ſome Ages, wherin he deſigneth thereby to accompliſh ſome greater Intendments: as when God purpoſed to revele the Glorious Light of the Goſpel through the whole World before the ſecond coming of *Chriſt*, he ſtirred up the Spirit of *Columbus*, by a ſtrange Dogmatical Confidence of more Earth then was before diſcovered, maugre all Repulſes, and Delays, Indefatigably, and Undeniably, to endeavor and attempt the Diſcovery therof: which yet he could never have effected if alſo the Compaſs, or Seamans Card, wherof former Ages were Ignorant, had not been then lately Invented; and ſo likewiſe the Gun, without which ſo few Adventurers could never have kept Poſſeſſion againſt Innumerable Natives. And about the ſame time Printing alſo was Invented, to Diſſeminate Knowledg through both the Worlds. But I do not eſteem Additions to be Inventions; as the Teleſcope or Microſcope, which are only farther Improvements of the Perſpective, (that was firſt Invented by a Mechanike:) or as the *Granado* is of the Gun, and the like. Yet we might hope for more both Inventions and Additions, if Philoſophy were made more Mechanical, and Mechanike more Philoſophical. Wherof we have now the greateſt expectation from the happy Inſtitution of the *Roial Society*; and that ſo many Mercurial Wits, Interceding between both theſe Regions of Speculation and Practice, will tranſmit Philoſophical Inſtructions to Mechanikes, and Mechanical Experiments to Philoſophers: and after all their Curious Diſquiſitions, and many Vibrations, like the *Pendulum*, ſetle at laſt in the moſt Direct Line of Truth, Proving all things, and holding faſt that which is Good, and ſhall be for the Good of this Nation, and of all Mankind: which ſhall render their *Society* a *Solomons Houſ*, and this Iſland a *New Atlantis*. And as the Lord *Verulam*

Iam hath well obſerved, that the Practical Theology of Scripture hath been by none better Ventilated then by Engliſh Divines; ſo may this Divine Hiſtory of the *Geneſis* of the World be beſt Elucidated by them, who though they ſuperſcribe *Nullius in verba* in defiance of any Human Magiſtery, yet always except *Verbum Dei*, in ſubmiſſion to Divine Authority. And if the Active Spirits of this Nation would freely clear and diſengage themſelvs from the Humor of Forein Novelty's, they might exceed others in their happy Endeavors; though we Tramontanes have been Judged by them better for Imitation then Invention: but I deſire them to produce any thing in this laſt Age equal to thoſe two Noble Inventions which were both of Engliſh Extraction: that is, the Inclinatory or Dipping Needle, whereby the Latitude is diſcovered; wherof, as I have received it by Tradition, the Inventor was *Robert Norman* our Countryman, whoſe Name deſervs more Heraldry; as they will eaſily acknowledg who ſhall attempt to Invent the like Natural Inſtrument, whereby to diſcover the Longitude. The other is the firſt Obſervation of the Circulation of the Bloud, wherof our Learned *Doctor Harvey* is the well known and Monumental Author. And for Philoſophical Diſcourſes and Diſcoverys of Nature I may name two others; who though Parallel one to another, yet I ſuppoſe neither of them can be Parallel'd by any other Nation: that is, the Great *Chancellor Bacon* whoſe Natural Hiſtory hath made his own Name Hiſtorical: and the truly Honorable *Robert Boyle*; of whom I may well ſay, that as *Hiero* made a Law in *Syracuſe* That every one ſhould believ whatſoever *Archimedes* affirmed that he could do; ſo all ought to believ whatſoever this Noble Perſon declareth that he hath done, in all thoſe manifold Experiments wherewith he hath enriched the World. Now let this be the Concluſion and Summ of the whole matter; That as the End of all Created Nature is the Divine Glory of the Creator, which the whole World as a Mirror was made to Repreſent to us Naturaly; ſo ſhould all Spiritualy Render it unto him. And thus we Chriſtians being taught by God, the Author both of Scripture and Nature, truly to know the Creation and Syſtem of the World, which Heathen Philoſophers groped to find out all their days, and have diſputed in all Ages, ſhould with the Primitive Hebrews, and their Divine Doctors, *Moſes*, *David*, *Solomon*, and the reſt, Glorify the Infinite *Jehovah*, Creator of Heaven and Earth. And

I have very much wondered that not only in Spirituals, but also in Naturals, Seing we should not See, and Hearing we should not Hear, and Understand with our Hearts, the things which are writ in such large Characters, and Proclaimed to us with so loud a Voice. Wherefore I beseech the Divine Spirit so to Illuminate us in the true Knowledg of his Word and Works, that henceforth they may be no longer hid from our Eys; but that it may now be said of Holy Scripture, and of the Nativity of the World therin,

Nota Mathematicis Genesis *tua.*

THE

THE Divine Hiſtory OF THE GENESIS OF THE WORLD.

SECTION I.

In the Begining, &c.

EXPLICATION.

In the very Firſt Being of Heaven and Earth, or of any Thing therin, or of any Originals therof from Abſolute Not being. And in the very Firſt Inſtant of their Duration, or Time it ſelf, then alſo commencing from Non-time or an Abſolute Nullity therof.

ILLU-

ILLUSTRATION.

1 *That the World is Finite; Proved by the Corporeal Quantity therof.* 2 *By Successive Quantity.* 3 *By Discrete Quantity.* 4 *Rejection of Impertinencys, and what Postulations only are required.* 5 *Sensible Demonstration of the first Proof.* 6 *Of the Second.* 7 *Of the Third.* 8 *The Possibility of the Worlds being* Ab Æterno *disproved.* 9 *The Possibility of being* In Æternum, *or Immortality, in what Sens granted.* 10 *The Summ of the whole Discours, That there was a Begining of the World.*

I. THat there was a Begining of the World (besides the Divine Authority of the Text) is as Rationaly Demonstrable, as it is Sensibly evident, That there is a Heaven and Earth: for it is also evident, that they are Bodys, Extended by Part beyond Part, and therefore Finite, or bounded with Extremitys of that Extension (which we call First, or Begining; and Last, or End; becaus we may begin to measure at one, and end at the other) for that very Extension which renders them Bodys by Extending Part beyond Part, doth also Terminate them, that is, Extend them so far, and no farther. Thus the whole Body of the World hath two great Parts; Heaven, and Earth. And whatsoever hath Parts is Finite, becaus every Part is Finite or Limited to a Proportion not so great as the Whole, otherwise it should not be a Part of the Whole. And as one Part is Finite, so are all the Parts of the Whole, becaus they are all Parts. And so Consequently is the Whole; becaus it is equal to all the Parts; otherwise it should not be the Whole of all the Parts therof. And thus Heaven, which is one Part of the whole Body of the World, is a less Whole in it self; becaus it is the whole Heaven. And so likewise Earth, which is the other Part of the whole Body of the World, is also a less Whole in it self; becaus it is the whole Earth. Now either of these two less Wholes is Finite in it self; becaus it is only a Part of the whole Body of the World: and becaus both these less Wholes are Finite, therefore the whole Body of

of the World is alſo Finite, though it be a greater Whole: for there is no Greater nor Leſs in Infinite, which is Infinitely beyond any Proportion, and without any Parts whatſoever; becauſ a greater Whole is that which hath greater Parts, or more equal Parts; and a leſs Whole is that which hath leſs Parts, or fewer equal Parts. And ſince whatſoever hath Parts is Finite, therfore whatſoever hath greater or more, or leſs, or fewer Parts, is alſo Finite, and cannot be Infinite. Again every Part is ſuch a certain Proportion of the Whole as it is, otherwiſe it ſhould not be ſuch a Part therof; and therefore hath ſuch a certein Meaſure of it ſelf, whereby it is ſuch a certein Proportion as it is, and not greater nor leſs. And as all the Proportions of all the Parts, are the Whole Proportion of the Whole; ſo all the Meaſures of all the Parts, are the whole Meaſure of the Whole. And whatſoever is Menſurable is Finite; becauſ it is Menſurable, and not Immenſ. Wherefore the whole Body of the World is Finite, as well as Heaven, and Earth, or any leſs Part, or the leaſt Particle therof whatſoever; wherof there is the ſame reaſon: Otherwiſe the Whole ſhould be greater then all the Parts, or the Parts greater, or more, then they are, which is Impoſſible. And the contrary therof So Mathematicaly true, and evident according to Common Sentence, (that every Part is leſs then the Whole, and the Whole greater then any Part, and equal to all the Parts therof) that it cannot be further proved by any thing more evident then it ſelf. Wherefore this Concluſion is moſt true and evident; *Omne Sectile eſt Finitum.*

II. Now as Corporeal Quantity, which is Conſiſtent, and hath Part beyond Part, is therefore Finite; So alſo Time, which is Succeſſive and hath Part after Part, is alſo Finite. And though Part beyond Part may be Inverted, and the Firſt become Laſt, or the Laſt Firſt; or Circulated, and the Begining United to the End (and ſo every Conſiſtent Quantity is Finite, becauſ it hath ſuch Parts) Yet Part after Part Succeed and follow one another in a moſt direct Line, and by Such an Immutable Law and Order, as can neither be Inverted, nor Circulated; otherwiſe there ſhould not be Part after Part; which muſt neceſſarily be in Temporary Succeſſion: for Paſt can never be Preſent, nor Preſent Future, nor all together. Wherefore Time cannot poſſibly be

Circular: for in a Circle all the Parts must Consist together; as in Circular Motion all the Parts must Move together. Though probably the Opinion of the Eternity of the World was grounded on some such Imaginary Circulation of Time, and Revolution of Platonical Years. Whereas, though all things measured by Time might be supposed to return again into the same State in all other respects, yet Time it self can never return to be the Same; becaus it is as Impossible to recall Past, as to anticipate Future. So that where there is such a fixed Priority and Posteriority runing still forward in a most Direct and Immutable Succession of Part after Part, which is Finite, there must necessarily be a Finite and Fixed First, or Begining; and Last, or End; according to the Fixed Order and Succession of the Parts. And as certainly as this Present Instant is now the Last or End of all Time Past, or Present, which hath hitherto Actualy Existed, or doth Exist; so certainly there was some determinate Instant, which was the first or Begining therof. And so this Conclusion also is most true and evident; *Ubi Prius & Posterius, ibi Primum et Postremum.*

III. Lastly as Bodys and Time, so Number or Quantity Discrete, which hath Part Discreted and severed from Part, is also Finite in it self; and doth most Discernibly manifest the Finite Nature, both of Bodys, as in the Scale; and also of Time, as in the Dial: whereby their Continuous Parts being Arithmeticaly Divided into Numerable Proportions are rendred most apparently Numerable and Finite. And so also this Conclusion is most true and evident *Nullum Multiplex est Innumerum.* From all which Conclusions drawn from every kind of Quantity, Corporeal, Successive, and Discrete, it most Necessarily follows, That whatsoever is Quantitative is Finite; for it must be granted under the highest pain of Contradiction, That Actualy Mensurable cannot be Actualy Immense, nor Temporary Eternal, nor Numerable Innumerable.

IIII. Nor is this plain Probation concerned in those more Curious Disquisitions, Whether Quantity be any Real thing in it self, or only a Mode, or Relative Respect (or I know not what others pleas to term it) Since it is most evidently the Geometrical, Chronical,

Chronical, or Arithmetical, Measure of all Quantitative things, which are within the Virge therof, and Measurable by it. Nor of what Parts it doth Consist, or how it is Divisible into them; since it is most evident that it hath Parts. Nor yet whether any Whole Quantity hath Physical Parts; since it is most evident that it hath Mathematical Parts, and is Divisible into them. And though I shall heerafter inquire into all these, yet I will neither now prevent my Self, nor intangle this Probation (which as it is most firm and solid in it self, so I desire to render it most clear and free from all Impertinencys) with any such Curiositys. Nor do I begg any therof before hand; but only insist upon these most reasonable and undeniable Postulations, That an Inch is the twelfth Part of a Foot, not more nor less; and a Foot twelve Inches, not more nor less. That an Hour is the fower and twentieth Part of a Day, not more nor less; and a Day fower and twenty Hours, not more nor less. That an Unit is the hundredth Part of a Century, not more nor less; and a Century an hundred Units, not more nor less. Or yet more plainly, That an Inch is an Inch, a Foot a Foot, an Hour an Hour, a Day a Day, an Unit an Unit, and a Century a Century. And so any greater, or less, Part, or Whole whatsoever; which are all Identical Propositions, and neither need, nor are indeed capable of Probation. Nor are these Sections of Continuitys only Imaginations, or the Institutions of Reason; but Realitys in Nature. And so God Created the Heaven and the Earth distinct Parts of the whole Body of the World, and made the Evening and Morning a distinct Day, and consequently the Cardinal Numerations therof. And he made the Heaven to be above, or without, the Earth; and the Earth to be beneath, or within, the Heaven: and the First day to be before the Second, and the Second before the Third; and consequently the Ordinal Numerations therof. And heerin I suppose no Human Reason or Sens will or can dissent from Divine Authority; becaus these are things also Rationaly, and Sensibly, evident in themselvs: however some may doubt or dispute what I have evidently proved heerby, That there was a Begining of the World. Nor do I labor, or care to prove, when that determinate Begining was (which I leav to Chronologists) but only that there was such a Begining whensoever it was, which sufficeth my present Intention.

V. For as in a great Waſt or Common, though only the learned Artiſt can give an exact account of all the Acres, Rodes, and Perches therof; yet every Vulgar Ey can diſcern that it is Meaſurable and Finite, and can eſtimate it more or leſs. And as every Traveler, though he hath not an Itinerary to inſtruct him in the juſt Diſtances between one City, or Country, and another, yet knows that there is a certein Space between them, otherwiſe ſuch, and ſo many Paces, could never bring him from one to the other: ſo though it be the Work of Geometricians and Aſtronomers to meaſure Heaven and Earth; yet we all know that the Earth on which we tread hath a Surface, and a *Diameter*, which are Finite; becauſe the Surface on which we tread doth end and terminate it ſelf under our feet; and that doth alſo determinate the *Diameter*, which is Proportionable unto it: and becauſe the *Diameter* is Finite, therefore alſo the Circumference which muſt be Proportionable therunto is Finite. And ſo is every Sphere of the World, Air, Æther, and any higher Heaven, or whatſoever we can Imagine to be the utmoſt Circumference of the whole World: for to whatſoever Circumference our Imagination can extend it ſelf, it can only be Proportionably greater then the Circumference of the Earth, which it encompaſſeth; and muſt alſo have a *Diameter* proportionable to it ſelf: both which evidently prove it to be Finite, as well as the Earth; becauſ there is no Greater nor Leſs in Infinite, as I have already proved.

VI. And ſo though we may diſpute the Nativity, or certein Begining of the World; yet it is moſt evident and indiſputable that it had a Begining: for none can deny it to be this Day, or Hour, or the like, one Day, or Hour, or the like, elder then it was the laſt; and ſo backward as far as he pleaſeth: therefore he muſt alſo confeſs, that there was ſome Firſt Day, Hour, and the like, and conſequently ſome Firſt Inſtant, and Begining therof: for the Duration and Age of every thing muſt neceſſarily be computed from a Begining or Nativity; otherwiſe it ſhould be incapable of any Addition or Succeſſion (which is apparently in all time) becauſ it already exceedeth all Number: for Precedency of Part before Part without any Begining renders the Precedent Parts Innumerable, and conſequently incapable of any Succeſſion or Addition.

VII. So

VII. So also in Number there must necessarily be a First, and no Number can precede an Unit; though you may still add to it, and possibly multiply it to any Summ Imaginable; which yet being once Stated will be found as Numerable as a Single Unit; becaus it is only the Addition of so many Units: for as a Day, or Hour, or any other Part of Time Actualy Past, is only a Day, or Hour, or such Part of Time as it is, and not greater, nor less; so every Day, or Hour, or other Part of Time whatsoever, is only One Day, or Hour, or One such Part of Time as it is, and not more, nor fewer: and therefore so many Days, or Hours, or other Parts of Time as are Actualy Past, are only so many Ones as they are, and not more, nor fewer; which though never so many must necessarily be all Numerable, by Addition of so many Ones as they are, and not more, nor fewer. And consequently all Time Actualy Past, which may be Numbred by them, is Numerable and Finite: and therefore had a Begining; becaus the Number therof is Ordinal or Successive; wherof there must be a First. Thus if we should compute the whole Age of the World according to the particular Ages, or *Secula*, of Men or Brutes; or if you pleas according to the Revolutions of Platonical years; yet there must necessarily have been a First, Second, and Third *Seculum*, or Revolution, or so many as we will suppose to have been Actualy Past and Precedent, and not more, nor fewer, nor other then Successive. All which summed up together will be found as Finite as a single Unit, and must have a First, and Last, aswel as One and One Ordinaly and Successively. Nor indeed can we Rationaly Imagin any Time whatsoever Actualy Past and Precedent, not to be Actualy Finite. And if it cannot be otherwise in Imagination, much less in Reality.

VIII. Yet the World might Possibly have Existed before it did Exist, or Actualy was; and as long before as you pleas to Imagin; and so it may still be continued Perpetualy in Possibility; which yet will be alway Possible, and can never be Actual: for no such Precedent, or Subsequent Perpetuity, ever was, or shall be, nor can reasonably be Imagined to be Actual. Neither is it properly a Possible Perpetuity, but rather a Perpetual Possibility of such a supposed Precedency, or Subsequent Futurity, which

can

can never be Actual; otherwise it should not be Perpetualy Possible: for as Possible, while it is Possible, cannot be Actual; otherwise it should not be Possible, but Actual: so Perpetualy Possible can never be Actual; becaus then it should ceas to be Perpetualy Possible. As it is said of Corporeal Quantity, that it is alway Divisible into alway Divisibles; ever Possibly, but never Actualy: becaus if it should once be Actualy Divided into all its Divisibles, then it should ceas to be alway Divisible (which is a most true and evident Ratiocination, supposing such a Perpetual Divisibility therof, wherof I shall heerafter discours) But no Possibility whatsoever, either Precedent, or Subsequent, doth militate against this present Discours concerning the Actual Existence of the World.

IX. This Perpetual Possibility in Futurity is the Duration of Immortal Spirits; which though it may not seem to be the same with Time in a restrained sens (as Time may be distinguished from Duration) yet is the same with it in a general sens. And so the Soul of Man, both in this Mortal Life, and also in his Immortal Life heerafter, shall continue ro be under the same Duration; though his Time may be restrained to this Mortal Life, which hath an End, and is computed according to the Chronology of the Hours, Days, and Years therof: and so we commonly distinguish between Temporal, and Eternal or Everlasting. Thus *Plato* makes all Time to be the Measure of Duration according to the Motion of the Heavenly Bodys, which divide it into such Parts or Sections therof: and therupon, I suppose, grounded his Opinion of the Circular Revolutions of Time, like the Circular Motions of the Heavens. But as Duration was Coetaneous with the first *Chaos* (for there was an Evening before any Morning, or Illumination of the Æther; and three several Days before the Sun and Stars) so the same Duration shall continue when they shall be dissolved, and when Time, in that sens, shall be no more. And yet in all the Perpetual Possibility of this Duration, so farr as it shall ever heerafter become Actual, it shall likewise be Actualy Finite, as I have already proved. Wheras Proper Eternity is neither in any Precedent, nor Subsequent Possibility; but always Actual, and alway Present, or one Perpetual Instant: which is Divine, Infinite, and Incomprehensible, and of another nature, Infinitely and Incomprehensibly Different from

from any Finite Duration, Actual, or Possible, whatsoever; which it doth Comprehend, but not in any maner Confound, or Change the Temporary nature therof; as I shall shew in the next Section.

X. Wherfore I Conclude upon the whole precedent matter, That every Quantity, that hath Existed or doth Actualy Exist, is Actualy Finite. And so is every Quantitative thing measured thereby. And that no Imagination, nor Possibility it Self, can make it to be otherwise. Becaus all Quantity and Quantitative things have Parts, and all Parts are Finite, and therefore whatsoever hath Parts is Finite, and whatsoever is Finite, is Terminated or bounded with Extremitys, or First, or Begining; and Last, or End; Respectively according to the Parts: otherwise it should not be Finite. And particularly, that time and Duration (which is Successive) and all Temporary and Durable things, had a Realy Precedent and fixed First or Begining. Now that the force of this most Cogent Argument may not be lost or spent in so large a Dilatation, I will briefly Summ it up in these few and short Propositions, which I shall present to any Man of Reason most strictly to examin, and consider whether he can deny any one of them, or the Consequence of them all, without forfeiture of his Rationality.

I. *That every Day is One Day, and of no more nor greater Number, nor Duration.*

II. *That Yesterday was One Day, Actualy Past, and Precedent to this Day; and so all the Days Actualy Past and Precedent one unto another.*

III. *That the whole Number and Duration of all the One Days Actualy Past, and Precedent, is as Finite (or bounded with first, or Begining; and Last, or End) as of any One Day.*

IV. *Therefore there was a First or Begining of the whole Duration of all the One Days, Actualy Past, and Precedent, aswel as of the particular Duration of any One Day.*

Wherefore I Conclude according to that right and true Sentence, *Vim inferunt Humano Intellectui qui Mundum affirmant Infinitum ex Finitis Partibus Constantem.*

SECTION II.

SECTION II.

God, &c.

EXPLICATION.

The Infinite Creator of Heaven and Earth.

ILLUSTRATION.

1. That God is Infinite. 2. Of Infinite. 3. That Absolute Nothing is Not finite. 4. Of Proper and Improper Infinite. 5, Of Proper and Improper Not finite.

I. WE have proved that Heaven and Earth, and Consequently the whole World, had a Begining of Being from Absolute Not being, or was Created; becauſ it is Finite. Wherefore the Creator of all Finites muſt neceſſarily be Infinite: for if he were Finite, he muſt alſo be Created by another, and ſo Infinitely. But there can be no ſuch Proceſs Infinite, becauſ it is Succeſſive from one to another, and therefore muſt be finite, as I have already proved.

II. But becauſ our Underſtanding alſo is Finite, and not Infinite; therefore the proper Object thereof muſt be Finite, and not Infinite: and all the knowledg we can have of Infinite is only from and by Finite. Now we have diſcovered Finite to be Partial; that is, either a Part or a Whole having Parts. And ſo indeed not only all Quantity, and Quantitative things, wherof we have diſcourſed, but alſo all Qualitys, and Qualitative things, are Finite, becauſ they have certein Degrees of themſelvs, which are their Reſpective Parts, or Proportions. And alſo all Subſtances or Created Entitys whatſoever either have Parts, or are themſelvs Parts of the Univerſ. And the Univerſ it ſelf is only the Whole

Whole of all thoſe Parts whatſoever; and Conſequently Finite. Wherefore Infinite muſt neither be any Part, or Degree, nor any Whole having Parts, or Degrees; otherwiſe it ſhould not be Infinite, but Finite. Alſo Infinite, becauſ it hath no Parts, or Degrees, in it ſelf, is not Partialy, or Gradualy, what it is; but Infinitely without any Parts, or Degrees, One, and All, in it ſelf, and Infinitely comprehending all Finites: for if it were more then One, or leſs then All, it ſhould be Partial, or Gradual; becauſ More, or Leſs, are Partial, or Gradual, and conſequently Finite. Thus Infinite doth Tranſcend Finite, not Finitely, by any Parts, or Degrees whatſoever; but Infinitely, according to its own Nature, which is Infinite. Wherefore alſo Finite cannot be any the leaſt Part, or Degree of Infinite; for then the Whole alſo ſhould be Finite. And Infinite doth not only Infinitely Tranſcend Finite; but is alſo Infinitely Different from it, without any Part, or Degree of Difference. And ſo though it doth Comprehend all Finites (as we ſay, Infinite Being doth Comprehend all Finite Beings, Infinite Immenſity all Finite Bodys, Infinite Eternity all Finite Time, and Infinite Unity all Finite Numbers) Yet it doth alſo Comprehend them Infinitely, according to its own Infinite Nature, that is, Incomprehenſibly as to our Finite Underſtanding; and Inconfuſedly as to the Finite Nature of the Things themſelvs: and ſo God is the only true Tranſcendent and Eminent Cauſ neither Confounded, nor Compounded with them; nor ſuch as doth Contradict, Alter, or Interfere with them, in any kind or maner whatſoever. And wheras Infinite and Finite do thus Conſiſt together, and yet Infinitely Differ, we muſt alway reſerv the Notions therof under moſt Different and Diſtinct Conſiderations, and not Confound them one with another in our Underſtandings, which are not Confounded in themſelves; otherwiſe we ſhall thereby alſo Confound our own Underſtandings, and diſturb any right Apprehenſion, either of Infinite, or Finite. Thus is Infinite both the Infinite Affirmation of all Being, and Welbeing; and the Infinite Negation of all Notbeing, and Ilbeing: which Negation being double, is only the Infinite Affirmation of it ſelf.

III. As Infinite is Infinitely Affirmative, ſo Abſolute Nothing is Not-finitely Negative, or the Notfinite Negation of all that

is Affirmative. And any Affirmation of it self, as that Nonentity is Nonentity, and the like, is only the Notfinite Negation of it self. Wherefore Absolute Nothing is so purely Null, that as *Plato* rightly saith, it is altogether Ineffable, and Incomprehensible, and not capable of any Name or Notion, but what is borrowed from thing, or Being, wherof it is the Notfinite Negation: and therefore I rather chuse to term it Notfinite, to restrain it to the Negative Signification of it self, which purely is not; then Infinite, which hath also an Affirmative Signification of what it is in it self Infinitely, and wherof Notfinite is the adequate Negation, and as Notfinitely Notfinite as Infinite is Infinitely Infinite.

IV. But Infinite is either Proper, or Improper. Properly Infinite is only God; who as he is Infinitely One admitts only an Identical Predication of Himself, or That God is God, for *Quicquid est in Deo est Deus.* And yet as he is Infinitely All, and the Transcendency of all Finite Perfections which are many and several; so there is Improperly Infinite, which may Improperly be Predicated of him severally according to our Finite Understanding, and his Infinite Condescension thereunto. And such are all those Partial and Distinguishing Notions which we frame of him. As that he is Entity, Immensity, Eternity, Unity, and the like: Whereby we render that which is Infinite, and Infinitely One in Himself, and with Himself, Partial, and Several, and Consequently Improperly Infinite; but not Properly Finite: for though thereby we render that which is Infinitely One in Himself, Many in our Understanding; Yet we also acknowledg him to be Infinite Entity, Infinite Immensity, Infinite Eternity, and Infinite Unity, and not More, or Less. Again more Improperly Infinite is that which is Properly Finite in it self, but Improperly Infinite in respect of God who is Infinite; as Sin (which is committed against him) is therefore by Divines said to be Infinite: and so indeed is every Creature in respect of him, who is the Infinite Creating Cause, and Being of the Being therof. But most Improperly Infinite are such things as are only Indefinite unto us, or exceed our Finite Understanding. So we say that the Globe of Heaven and Earth which is Finite in it self, is Immense, and the World Eternal, and the Dust of the Earth Innumerable, and the like,

like: And so we term a Circle Figuratively and Hieroglyphicaly Infinite, and the like.

V. Also Notfinite is either Proper or Improper. Properly Notfinite is only Absolute Nothing, wherof there can be no other Proper Predication then that it is not; Nor Nothing is Nothing. Improperly Notfinite is either that in it self, wherof we frame some Partial and Distinguishing Notions; as Nonentity, Vacuity, Nontime, Nullity, and the like; which are only Particular and Respective Negations of that wherof Absolute Nothing is the Absolute Negation. Also there are other more Improper Notfinites, answerable to such Improper Infinites, which we have before Specified.

SECTION III.

Created, &c.

EXPLICATION.

Caused the Finite Being of Heaven and Earth by his Infinite Power to Be from Absolute Notbeing.

ILLUSTRATION.

1 *Of Infinite Power.* 2 *What Creation is.* 3 *Of the Possibility of Creation by Infinite Power.* 4 *Of the Impossibility therof by Finite Power.* 5 *Of Annihilation.* 6 *Of Proper and Improper Creation.* 7 *Of Proper and Improper Annihilation.*

I. HAving proved that there was Actualy such a Begining of the Being of Heaven and Earth, and of all things therin, from Absolute Not-being; and consequently a Creation; I need not now to prove the Possibility therof; becaus it Actualy was. Yet farther to confirm it, I shall proceed

to examin and refute the Grand Argument against the Possibility therof, *Ex Nihilo Nihil fit.* Absolute Impossibility is that which no Power can Possibly reduce into Act or Actual Being; Wherefore whatsoever may be so reduced is Possible to Infinite Power, which should not be Infinite, it any Affirmative Act should be Impossible unto it: for then it should be Limited by Somthing Possible which it cannot Act, and consequently be Finite. Thus Infinite Power must Necessarily be Omnipotent or able to Act all things, except Contradictions, which are only the Negations of it self, and consequently infer a Notfinite Impotence. And not to be able to Act such Negations is a double Negation; which as I have said, is only the Affirmation of it self. So God cannot Contradict Himself; either in Essence, as not to be God, or not to be Infinite, which is the same; or in Operation, as to make the same Thing to Be and Not be Absolutely; for then he should undo what he doth. And so God cannot make Absolute Nothing or Notbeing to Be; for then it should Be and Not be Absolutely, which is an Absolute Contradiction. Neither can he Convert Absolute Nothing into Somthing, or Extract Somthing out of Absolute Nothing; for then it should not be Absolute Nothing, out of which there is Nothing which may be so Converted, Extracted, or Made, in any kind or maner whatsoever.

II. So that if to Create were any of these Operations, as the Objection doth import, then it should be confessedly Impossible. And I suppose some such Misapprehension hath been the ground of that Error. Wheras Creation rightly understood is only a Causing Finite Being to be from Absolute Notbeing, as the Negative Term, from which it doth Commence; and not of which or out of which it is Made in any kind or maner whatsoever. Now becaus Absolute Nothing or Notbeing is only a Negative Term or pure Negation, it can neither resist Creation, nor contribute any thing to, or toward it; becaus it is Absolute Nothing.

III. And becaus Absolute Nothing cannot resist in the least, therefore Creation is Infinitely Possible to Infinite Power; becaus there is Nothing to resist it. And also becaus whatsoever

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is Possible to Infinite Power, is Infinitely Possible to it; and not Partialy, or Gradualy; becaus Infinite hath no Parts, or Degrees. Nor doth the Creation of Finite Being Contradict, or Alter, Augment, or Diminish, Infinite Being, or Notfinite Not being. And so the presen Finite Being which is Created (as we have already shewed) doth not Contradict, Alter, Augment or Diminish, either of them, which are Eternaly the same in themselvs.

IIII. But becaus Absolute Notbeing cannot contribute any thing to, or toward, Creation, therefore it is Impossible to any Finite Power: for Absolute Nothing doth afford no Matter, Principle, Preparation, Inclination, Capacity, or any Somthing whatsoever; wherupon, or whereby, Finite Power may begin to work; and where there is no Begining, there cannot Possibly be any Progres, or Perfection therof by any Finite Power; but only by Infinite Power, which can Create Being, and the very Begining therof from Absolute Notbeing. Also all Finite Power it self before it was Created was absolutely Null; and so had no Power in it Self to Create it self, or any other Being, from Absolute Notbeing. Nor could God himself Delegate this Infinite Power to Angels or *Dæmons*, or any Rabbinical or Platonical Subcreators; which must be either Totaly, or Partialy, not Totaly; for then God should ceas to have or be Infinite Power in Himself, and consequently to be God; which is an Infinite Contradiction, nor Partialy; for Infinite hath no Parts. Certeinly no Angel, nor Man, the chief of Natural Operators, did ever arrogate unto himself a Creating Power. Nor have we any Instances of Creation in the whole History of Nature, among all those Monstrous Relations, which the Writers therof have inserted. Nor hath any Poetical Fansy ever Invented or Imagined a *Metamorphosis* of Being from Notbeing. Much les hath any Philosophy ascribed this Creating Power to Nature her self; but rather denieth a Creation; and yet to solv it, is forced to substitute an Impossible Eternity of Finite Nature; and certein Fictitious Powers, Eminences, and Equivocal Causalitys, which I shall also examin heerafter.

V. As

As Creation is a Cauſing to be from Notbeing, ſo Annihilation is a Cauſing Not to be from Being; which is moſt Poſſible to the Infinite Creator; becauſ it is only the withdrawing his own Infinite Power, whereby he doth continualy Cauſ the Creature to Be; but Impoſſible to any Finite Power; becauſ it cannot reſiſt the Infinite Creating Power, which doth ſo continualy Cauſe the Creature to Be. And as there can be no Annihilation by any Finite Power; So we never read of any by Infinite Power: Nor probably will God ever Annihilate any thing which he hath Immediately Created; for he doth nothing in vain, but continueth and reſerveth all things, which he hath made by Proper Creation, for his own Everlaſting Glory.

VI. Thus to Cauſ to Be or Continue to Be from Abſolute Notbeing is Proper Creation. But there are alſo Improper Creations, which do not produce or preſerv any Being from Abſolute Notbeing: but only alter the Created Being in ſuch a Supernatural maner as is beyond all Natural Generation, or any other Natural Power of the Creature: which being Finite, and no more then it is; as it cannot Create without Infinite Power, which it hath not; ſo neither can it Act any thing beyond that Finite Power which it hath. And thus, though it is the Opinion of Divines that God Originaly Created nothing after the Begining, except Souls of Men (or Angels if they were not Originaly Created in and with their Heaven) by Proper Creation; Yet God is ſaid to Create in all the Six days, and expreſſly in the Fifth day to Create great Whales (though it be alſo ſaid that the Waters Produced them aswell as others) by Improper Creation, which was his Immediate Ordination of the whole Frame and Courſ of Nature, and Original Generation of them all: which the ſeveral Creatures in their Firſt *Chaos* (before their Active Qualitys and Miſt Forms were Produced, and all other previous and requiſite Matters Powers and Inſtruments were prepared and adapted by God) could not perform in or by themſelvs, nor Generate others, untill they were ſo fitted and inſtructed, and the Divine Bleſſing of Multiplication added thereunto, as I ſhall ſhew heerafter: and therefore all thoſe Works of the Six Days, which did Succeed the Original and Proper

Creation

Creation in the Begining, were Improper Creations. So also all Positive Miracles, which are Preternatural, or beside the Natural Course and Order, are Improper Creations.

VII. Proper Annihilation is a Causing any Being not to be Absolutely: and improper Annihilation only a Preternatural Alteration therof. And as God in Positive Miracles doth work beyond Natural Power, so in other Privative Miracles he doth obstruct and suspend it. As in causing Iron to swim by suspending the Gravity therof; or fire not to burn, by Suspending the Heat therof, and the like.

SECTION IIII.

The Heaven and the Earth, &c.

EXPLICATION.

The whole Body of the World, consisting of Several Heterogeneous Members, Heaven, and Earth; which were Created together in the Begining.

ILLUSTRATION.

I. *Of Heaven and Earth.* 2. *Of Heaven.* 3. *Of Earth.* 4. *Philosophical Consyderations of Entity, and the Differences therof.* 5. *Of Substances and Accidents.* 6. *Of Matter and Forms.* 7. *Of Common and Proper Accidents.*

I. WE have heer a brief Description and Map of the World, and of the whole Globe of the Matter therof, from the utmost Circumference to the inmost Center, which was all Created in the Begining: for neither do we read, nor can we reasonably suppose, that any new

Matter was Created afterward. Nor was it Created in the very Begining only Matter, or one Homogeneous Mass therof; but one Body, expressly distinguished into several Heterogeneous Members, Celestial, and Terrestrial; or Heaven, and Earth. Nor was the Heaven and Earth thus only Different in Nature, in their First Creation, but also Distinct and separate in their Situations, and not Confounded together, but Created such several Members of the great Body of the World. And as the Heaven is named before the Earth, so were the Celestial Bodys above or without the Terrestrial, incompassing them as now they do: for neither do we read, nor can we reasonably suppose, that there was any other Separation or Disposition of the Celestial Bodys afterward; as is expresly mentioned of the Terrestrial, or Terraqueous Globe: wherof, and of all their several Situations, I shall further discours heerafter.

II. The word Heaven, Hebraicaly is Heavens, not only Grammaticaly (as the word God in this Text) but Phisicaly, and in the nature of the thing it self. And so generaly the Hebrews distribute Heaven into three several Heavens of three several Natures. Wherof the higheſt is also called the Third Heaven; becaus it is Utmost and the last above us, and encompasseth both the others; and this I shall therefore call the Superæther. The midst, or Second, is the Æther, or Starry Heaven. The loweſt or First, is the Air which Immediately encompasseth the Terraqueous Globe. And these are all the Celestial Spheres wherof we read, and therefore I can acknowledg no more however Astronomers have pleased to multiply them. These three Heavens are thus built one upon another, and all upon the Terraqueous Globe, which is the Habitation of all Corporeal *Animals*: as *Amos* elegantly expresseth it, *He that builded the Storys of the Heavens, and founded his Troop on the Earth.* Of all the three Heavens the Third, which is the Supreme, is most Properly Heaven; and therefore also is called the Heaven of Heavens, by way of Excellency, and so is specialy called the Temple of the most high God; and is the Native Region and Province of Blessed Angels, or *Calum Angelicum*; and shall be the Everlasting Habitation of the Spirits of Just Men, or *Sedes Beatorum.* Wherof we have no farther discovery, then only that

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it was Created together with the other two Heavens; and so is Comprehended under one Common Name with them: and probably becauſe it was made Perfect in the Begining or firſt Inſtant of the Creation therof, and ſo muſt continue for ever, without any Elementary Miſtion, Generation, or Corruption; therefore we have no other account therof among all the Works of the Six Days; wherein the Elements, and whole Elementary Nature, and the Courſ of Generation, and Corrupti on therin, was Set in order. And accordingly I obſerv, that wheras the other two Elementary Heavens, Æther, and Air, are called *Expanſa* and Firmaments, this Superæther is never ſo termed; but only Heaven, probably becauſ it is not capable of Expanſion or Compreſſion. But as the Divine Wiſedom hath conceled any farther notice therof, and alſo given us very little Knowledg of the nature of Angels, the proper Inhabitants therof, as Impertinent for us to know in this preſent State; ſo I ſhall not preſume farther to inquire therinto, or diſcourſ therof: and indeed if the Hebraical Word Heavens be dualy rendred, it muſt be intended only of Æther, and Air.

III. As the Æther and Air are Elementary, and both of them Heterogeneous from the Superæther, and every of them one from another; So are all of them from the Earth, and Terraqueous Globe. And as Heaven generaly Comprehendeth all the three Heavens, ſo heer alſo Earth Comprehendeth both Earth, and Water; which were afterward formed into one Terraqueous Globe: and by that general Name in this Text is not only to be Underſtood Earth particularly (which was not ſo termed untill the Third Day, and then alſo is called Dry Land) nor the Terraqueous Globe ſuch as it was made afterward; but the Orb of Earth and the Water above it, which is alſo mentioned afterward. Thus we have a Diſcovery of what was Created in the Begining; that is, Superæther, which is alſo Superelementary and Æther, Air, Water, Earth, which are the fower Elements; as God the Creator hath declared, and *Moſes* reveled them unto us, both in this Text, and in the Context, whom I ſhall believ before all *Athens*, or any Modern Conceptions whatſoever; and ſhall accordingly prove them heerafter. And now upon this Subject Matter proceed to diſcourſ; and firſt enter upon ſuch

Philosophical Consyderations therof as may concern them all, and all Creatures Generaly; and so according to the order of this History of the Creation Expatiate into more Particular Contemplations of their several Natures afterward. The first and most Universal Consyderation of Heaven and Earth, and of all Creatures whatsoever, is that they are Entitys; for since Creation is of Being from Absolute Nothing, whatsoever is Created must necessarily Be; otherwise it should not be Created. So that an Entity is any Thing that Is, which I confess, is no more in effect, then that an Entity is Entity: whose Subject and Præjudicate, *Genus* and Difference, is, and must necessarily be the same; becaus it is the same *Genus Generalissimum* of all Things without any Specifical Difference. And heer I must also premise that in every Perfect and Proper Definition of any Specifical, or more Particular Thing, the Specifical or particular Differences therof must be Identical; becaus the Specifical or particular Essence or Entity is the only true Specifical or Particular Difference of every thing. But becaus we cannot know Essences as they are in themselvs, therefore we declare things by their Propertys, which is rather Description then Definition. As in the Common Instance, *Homo est Animal Rationale*, Rationality is not the true Specifical Difference of Humanity, though it be most Proper to Man; becaus it is not his Specifical Essence; and therefore doth not Define the Humanity it self. Nor doth it indeed Comprehend all the Properties therof, as Risibility, and the like; but only Describe it by one Proper Faculty. So that the most Proper Definitions are only Vocabularys and Nomenclatures, which yet are of good use to explain one Term by another; whereby we may avoid all needless Caption and Contention about Terms, and when the Thing intended thereby is clearly understood, it shall suffice me. And I have now made this Digressive *Parenthesis*, to save my Self the whole labor of Defining, and the expectation of any who otherwise perhaps might exact it of me: but I shall use as clear and pregnant Declarations or Descriptions as the Thing will afford. Thus I affirm Created Entity to be a Creature, or whatsoever is Created which is also Convertible with it. Again becaus the Created World doth Consist of several Hererogeneous and different Entitys and Natures (into which Differences

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we must also inquire) I affirm such a Different Entity to be whatsoever God hath Created Different in Nature from another: for as whatsoever he hath Created must Necessarily Be; so whatsoever he hath Created Different must necessarily Differ. Now heer we must Consyder a Difference which Scholemen have made of Entity it Self; which is, that it is either Entity Real, or Entity of Reason: Entity Real is in the Thing it Self and Nature therof; as Heaven, and Earth, and all things therin; Entity of Reason is in our Reason or Mind; as the whole Poetical World, and all things therin; Hircocervs, Hippocentaurs, and the like; which are therefore also called Entitys; becaus our very Imaginations and Fictions therof are Creatures, and Entitative, though the Imaginary Figments themselvs are as it were our Creatures, and Objectively Nothings. And so also there are Entitys of Sens, as all Deceptions of the Senses: for though there be no such Objects, yet there is Realy and truly such a Sensation, as well as when the Objects are Real and true, as I shall shew heerafter. Now as Entitys Real and of Reason are both Entitative, So there is such a Diversity of Entity it Self, Respectively, and Improperly: But as Entitys of Reason are Objectively Nonentitative, So also there is Absolutely and Properly no Difference, but a plain Contradiction between them, and Real Entity; as a Number, and a Null or *Cyphar*, do not Properly Differ, but Contradict one another becaus one is, and the other is not. Wherefore all Real and true Difference must be between things that are truly Real; and again whatsoever things are Real may Realy Differ from others in the Things themselvs and Natures therof. So that Real Difference is not only Corporeal, or of things wherof there is or may be a Local Separation, but also of any other Thing or Entity, though not Separated or Separable Localy: for though Entity it self be only Generical, yet there are also Specifical and Particular Essences, and Differences. Thus an Angel in a Body, and the Body, are Realy Different Specificaly in the Things themselvs, and Natures therof; though not Localy Separated, yet as truly as when they are Localy Separated. So that their Difference is not only from their several Localitys, but from their several Specifical Natures. So also the Soul, and Body of Man, are now Different, though not yet Separated, but only Separable by

Death; and shall be Different after the Resurrection, when they shall be Inseparable, as well as after Death and before the Resurrection, when they shall be Localy Separated: and So Heaven, and Earth, also Differ, not only becaus they are Localy Separated, but also becaus they are Heaven, and Earth; that is, Several Natures Specificaly Different. Also there may be an Individual Difference where there is no Specifical Difference, as in a Legion of Angels, or Men; Lastly there is a Numerical Difference where there is no Individual Difference; as all the Members of a Body are so many as they are Numericaly, but yet do not Differ Individualy: otherwise it should not be one Body, or Individual Composition therof, but so many several Individuals, as there are Members. But whatsoever doth Differ in any other kind, doth also Differ Numericaly; becaus Number, or Quantity Discrete, is Comprehensive of all Differences, Diversitys, or Discretions whatsoever. And now I shall Conclude that whatsoever God hath Created, and is in Nature and Not only in our Reason or Mind, Realy is: and whatsoever God hath Created Different, and doth Differ in Nature, and not only in our Reason or Mind, is Realy Different: which I suppose None can Deny, and according to these Undeniable Rules I shall proceed.

VI, The first Real Difference of Entity is that it is either Substance, or Accident. And now (becaus I know I must fight out my way by Inches against all Sceptical Disputers) I shall proceed as clearly and firmly as I can. And first I shall explain my Terms. By Substance I intend an Entity Naturaly Subsisting in it Self, and from which other Accidental Entitys do Naturaly Flow, and Subsist therin. By Accident I intend an Entity which doth Naturaly Flow from and Subsist in a Substance. So that Substance is both the Original Fountain, and Continual Foundation of any Accident, *Cujus Esse est Inesse*, which some cavill against, becaus they do not Understand it; though it is very true, and rightly said of an Accident, that it is the Accident of a Substance and in respect of the Substance: as it may be also said of Substance in respect of Accidents, *Cujus Esse est Subesse*. But as all particular Substances, Matter, and Forms, have their own Specifical Essences or Entitys, So also have all particular Accidents

Extension,

Extenſion, Figure, Denſity, Gravity, Motion, Heat, Light, and the reſt. Alſo though all Accidents do Originaly Subſiſt in their Subſtances; yet Derivatively one Accident may Subſiſt in another; as Figure in Extenſion, Gravity in Denſity; and they Immediately, and the others Mediately, in Matter. Alſo Several Accidents may Subſiſt Immediately in the ſame Subſtance; as Extenſion and Denſity in Matter, which is one moſt Simple Subſtance. And one Accident doth ſo Subſiſt in another, if it be a particular Product, Property, or Affection therof; as Figure is of Extenſion, or Gravity of Denſity, and the like. Now Accidents are therefore ſo called; becauſ they are Adventitious to the Subſtance, wherof the Specifical Eſſence, as I have ſaid, is in it Self, and doth not conſiſt in any, or all the Accidents therof; nor is, or can be Altered, or made More or Leſs, by the Variations therof; and alſo becauſ Accidents in themselvs do ſometimes Actualy Exiſt, Appear, and Exert their Operations; and ſometimes only Subſiſt Potentialy, and are Latent and Quieſcent in their Subſtances: as may evidently appear by all the ſeveral Variations of Accidents, the Subſtance remaining the ſame; becauſ it doth alway Subſiſt in it Self; and therfore always is Actualy what it is in it Self: for if it ſhould be Potential, then the Potentiality therof not Actualy Subſiſting in it Self, ſhould Subſiſt in another; and Conſequently be an Accident, and not a Subſtance. And thus every Entity which is Created, and cannot be Annihilated, muſt neceſſarily alway Subſiſt either in it Self, or in another Actualy, or Potentialy; But becauſ Accidents Affect, and indeed Perfect the Subſtance, therefore they are alſo called Affections; Now that there are Subſtances, I Suppoſe, none will Deny who acknowledg any Actual Entitys: and that there are Accidents, none can deny who hath the uſe of his Senſes; wherof all Senſible Accidents are the Proper Objects: and Objects of Intellect are only underſtood by Objects of Senſ. So that indeed all our Converſation is Immediately with and by Accidents; and we neither know Eſſences of Accidents, nor Subſtances, otherwiſe then by their Actual *Phanomena*, or Appearances: Nor can Subſtances Operate any thing without the Actual Operations, of Accidents. Wher efore that I may not fight as beating the Air, nor Contend for that which will and muſt be yielded, I ſhall more directly

oppugn that wherin I conceiv the greatest strength of opposition to ly, and accordingly addres my Self to prove that Accidents are Realy Different from their Substances: whereby I shall also prove that both Substances and Accidents Realy are; becaus any Real Difference is only between Real Entitys. Now as I have said before God in the Begining Created Heaven and Earth, and all other their Primitive Entitys therin, which yet did not then all Actualy Exist, Appear, and Operate: for it is said expresly, that there was yet no Light in the Heaven, but Darkness was upon the face of the Deep; and of the Earth that it was without form and void: and if they had been otherwise Created in the Begining, all the ensuing Works of God in the Six Days had been needless and Superfluous. Wheras Elementary Substances and the Essences of their Accidents in their Potentialitys being Created together in the Begining, the work of the Three first Days was to Produce their Accidents out of Potentiality into Act; as I shall particularly shew heerafter. And though this was not Properly Creation of any New Entity from Nonentity; yet as it was the Production of the Actualitys of the Accidents, and not of the Substances of the Elements, it plainly Discovers a Real Difference between Substances, and Accidents. Certeinly as it was the Production of Several Actualitys therof in several Days, it declares the Accidents so severaly Actuated to be several and Different in themselvs; and much more all of them to be Different from the Substances, from which they all Differ more Genericaly, and consequently more then one from another. Again if Substances and Accidents did not Realy Differ, then no Accidents of the same Substance should Realy Differ one from another, but all should be one and the same with themselvs, as well as with their Substance: For as the Mathematical Rule is most true, That if each of two Lines be Equal to a third, one of them must necessarily be Equal to the other. So if each of two Entitys, could be one and the same with a third, the one must Necessarily be one and the same with the other: and so if Extension, Figure, Density, Gravity, Motion, Heat, Light, and the rest, and all the Several Variations therof, were one and the same with the Æthereal Substance, then they must also be one and the same in themselvs: Yea if they were only Accidents of the Matter, as some affirm all Contrary

Qualitys,

Qualitys, Heat and Cold, and the reſt muſt be one and the ſame with the Matter; which is moſt Abſurd and Irrational: for then Heat ſhould be Cold, and Cold Heat, and the like. Alſo if we Conſyder the Continual Senſible Variations of Accidents, and their Productions out of Potentiality into Actuality, and Reductions from Actuality to Potentiality, whereby they ſo often Appear and Diſappear unto us, and their Deſultory and Exile Nature (which to ſome ſcarcely ſeems to be Real) we may not Imagin them to be Realy the ſame with their Subſtances, which Subſiſt in themſelvs, and are Fixed, Solid, and Subſtantial Entitys; and therefore always are Actual, and never Potential, as I ſhall particularly ſhew heerafter in all the enſuing Diſcourſes. Wherefore I Conclude that Since there are ſuch Subſtantial, and Accidental Entitys, and that they Differ one from another, in Nature, and not only in our Mind and Reaſon; that they both Realy are; and that Accidents Realy Differ from Subſtances, and alſo one from another.

VII. Subſtance is either Matter, or Forms; (for I muſt uſe that Common Term untill I can ſubſtitute another) And becauſ, as I have ſaid, we know Subſtances only Intelligibly, by their Senſible Accidents, I ſhall accordingly by them declare what I intend by Matter, and what by Forms, Matter is known by Corporeal Quantity, which is the Proper Accident therof. And this Quantity is either Extenſion, and the Products or Propertys therof, Figure, Poroſity, and the like; or Denſity and the Products or Propertys therof, Gravity, Corporeal Motion, and the like. Alſo Matter hath a Common Receptivity of Forms, and is Paſſively apt to be Conſubſtantiated with them, and is as the Body therof, being in it Self one Homogeneous and Uniform *Moles*, or Maſs; and is alſo the Paſſive Subject of all its own Corporeal Variations, which are Superinduced in it by the various Activitys of Forms. Whence it is rightly called *Materia*, which the Forms, as Architects, do ſeveraly Mold and Faſhion into fit Bodys for themſelvs. And therefore I Deſcribe Matter to be One Paſſive Subſtantial Entity or Common Body of Forms. Again Forms are known by their Qualitys, which are Generaly Active, as Heat, Cold, Moiſture, Drines, and the like; and are

not

not only Various, and Innumerable to us, but also many of them Contrary one to another: whereby I know their Substantial Forms also to be Several, Heterogeneous, and Difform: wherof some are apt to Consubstantiate themselvs Subordinately with the Passive Matter, which they as Spirits, do Actively Inform or InSpirit, as all Inferior Forms or Spirits; and some do not Consubstantiate but only Inform it; as the Human Spirit; and some neither Consubstantiate nor Inform it, as Angels: and though all Exist in it, yet none Subsist in it, as Accidents do in Substances; And so these Forms are Several Active Substantial Entitys or Spirits. And I shall henceforth generaly call them Spirits; Wherby I do not intend Spirit Grammaticaly, that is Breath; nor yet with Physicians, and others, those Igneous Aereous, Aqueous, and Terreous, Natural, Vital, or Animal Spirits, which indeed are only such Qualitys of the Elementary Spirits; but Substantial Spirits Distinct or Different from the Matter, as I have before discourſed them. And so there are not only Angelical Spirits which Exist Separate from the Matter Naturaly, though in it Localy, and Human Spirits which are also Immaterial, and such as may so Exist separately, as well as Angelical, and yet are apt to Inform or InSpirit the Human Body wherwith they are Compositeds, But also Material Spirits, which cannot so Exist Separately, or as Separate Substances without the Matter, and therefore are called Material, though they are in themselvs neither Matter nor Homogeneous with the Matter as I shall shew heerafter. And so the Wiseman mentioneth *The Spirit of a Beast that goeth downward to the Earth*, as well as *the Spirit of Man that goeth upward*. And so also there are Vegetative Spirits, and the Spirit of the Heaven (as the Author of *Esdras* saith of the Firmament) and of all the Elements, (which are more Properly Material becauſ they Immediately Consubstantiate Matter) that is, such Active Substantial Entitys, as I have before Described. And there are also Accidental Spirits or Spiritual Activitys Powers, and Virtues mentioned in Scripture. Which yet are no Substantial Spirits, but Subsist in them. And I suppose this general Name Spirit doth better expres all simple Substantial Activitys (which were Immediately Created by God, as well as Matter, and can never be Annihilated or Altered as they are in themselvs, any more then Matter it Self) then Forms

by

by which they are commonly expreſt as well as *Formæ Miſtorum*. And therefore I do not term them Forms, (but I rather reſerv *Form* to expreſs that which is otherwiſe called *Formæ Miſti*, or *Compoſiti*, by which I intend only the Generative Complexion and Compagination of thoſe ſimple Created Spirits and Matter which are Ingenerable and Incorruptible in themſelvs; and wherof Generation and Corruption are only the Confabrication, or Demolition; as I ſhall ſhew heerafter: and conſequeatly every *Forma Miſti*, or *Compoſiti* is Generable and Corruptible: and ſo theſe Forms are as far Different from the others (which I therefore term Spirits) as they are from Matter; and are called Subſtantial only becauſ they are the Complexions of the others, which are Subſtances as alſo Material Spirits are ſo called only becauſ they are ſo United to the Matter, as I ſaid before. Having thus explained my Terms, I ſhall proceed (as before concerning Subſtances and Accidents) to prove that Matter and theſe ſimple Created Spirits Realy Differ, whereby I ſhall alſo prove that there Realy are both ſuch Matter and Such Spirits. And wheras it is now generaly granted that there are ſuch Angelical and Human Spirits Realy Different from Matter (for which, I ſuppoſe, we may thank Chriſtianity) I ſhall accept it; and apply my Self only to prove the ſame of the reſt; and then I preſume no Heathen can deny it of the others. Now in our preſent Hiſtory of the Creation it is ſaid that the Water brought forth Fiſhes after their Kinds, and Fowls after their Kinds, and the Earth Beaſts after their Kinds, and Creeping things after their Kinds. Whereby it appears that theſe Creatures were of Several Kinds, and Heterogeneous one from another, and Conſequently all of them from the Matter; which being one Homogeneous Subſtance in it Self can never Produce any Heterogeneous Subſtances; and therefore all this Heterogeneity muſt neceſſarily be from ſome other Subſtantial Principles; that is, their Spirits: which were Created thus Specificaly Heterogeneous one from another, and all of them more Genericaly Heterogeneous from the Common Matter. And ſo it is alſo expreſly ſaid concerning Vegetatives; and muſt be reaſonably underſtood of Heaven, and Earth, and all the Elements: for the Matter of them all being one and the ſame could not Conſtitute and Denominate them Heaven, or Earth, neither could they be ſo Denominated from their own Proper

Qualitys, which were not yet Actualy Produced, but afterward in the Three first Days. Wherfore there were such several Hererogeneous Substantial Principles (which I call Elementary Spirits) Created in the Begining and then Actualy Subsisting in and with the Matter, which did so Denominate the Heaven and Earth, and the rest. And if they together with the Matter could not Produce their own Proper Qualitys, without such a Supernatural, though Improper Creation; much less could the Matter of it Self Produce any Such Substantial Spirits, and Activitys, farr more excellent then it Self. Again if Accidents of the same Substance being Several must therefore Realy Differ from the Substance, as I have before proved, then certeinly Accidents of Several Substances, which are not only Several, but also Contrary, do necessarily prove that they can not proceed from one and the same Substantial Principle, such as Matter is: for then the same Nature should destroy it self by its own Natural Contrarietys. And though in Mist Bodys which are Composed of all the Elements there be the Substantial Principles of Contrary Qualitys, Heat, Cold, Moisture, Drines, and the like Mist and Contemperated together, or though the same thing may Produce Contrary Effects in Several Subjects, as Motion may excite Heat in Fire and Cold in Air, or the same Faculty may exercise Contrary Actions toward Contrary Objects; as the Will or Appetite doth Affect that which is Pleasant, and Disaffect that which is Displeasant; Yet Matter, which is one and the same, cannot Produce Contrary Activitys, and Exercise Contrary Operations in it Self, which destroy one another, and so consequently should Corrupt it self by such Contrary Qualitys. Wherefore all Generation and Corruption, and all *Menstrua*, and the like, do plainly prove that there are Several Substantial Principles of Such Contrary Qualitys, not only Realy Different from the Matter, but also Difform one from another. And therefore, unless we affirm Heat, Cold, Moisture, Drines, and all other Contrary Qualitys, and Consequently Æther, Air, Water, Earth, Vegetatives and Sensitives to be all one and the same and not Different; and thereby Confound Heaven and Earth, and all things therin, and our own Notions therof, we must Necessarily grant that there are such Several Accidental Qualitys, and also such Substantial

Principles

Principles therof, Different one from another, and consequently all from the Matter. And this may appear most clearly by many Sensible Distinctions and Differences between them, which I shall now only generaly mention, and heerafter more particularly discover in the ensuing Discourses. As that Matter hath *Pondus*, and the Products therof which Spirits have not: but there are Active *Potentiæ* of Spirits and all the various Operations and Effects therof, which Matter hath not: And the *Pondus* of Matter tendeth from the Circumference to the Center, but the *Potentiæ* of Spirits from the Center to the Circumference. And Matter being only one Homogeneous Body hath only one Center; but Spirits being Many and Several have every one of them in their *Compositæ* a several Center. Also all Matter is Continuous; because it is one Homogeneous Body; but the Contiguity of several Bodys is only from the several Spirits. Also Matter tendeth Naturaly to Rest, but Spirits intend their Acts and Exercises to the Utmost. Also Matter hath only Different Degrees of More or Less; but Spirits have their Actively Contrary Qualitys, and the like. Now though I cannot Sensibly Produce and Present such a *Genius* of things or Spirit, as it is in it Self; not only becaus it is a Spirit, but also becaus it is a Substance; which as I have said that it is only Intelligible (as none can discover Pure Matter, or *Materia prima*, as it is in it Self, but both may be discerned by their Sensible Accidents, wherof the Accidents of Spirits, which are Proper Sensibles, are more Sensible then of Matter, which are only common Sensibles and Sensed by the others) so I have proved Matter and Spirits by their Different Accidents to be several Substantial Principles, and Realy Different one from another. And though none can affirm that there is any Matter Separate from Spirits; yet it is granted that there are Spirits Separate from Matter, as Angels. Nor may it seem strange that two such Substances should be Consubstantiated into one, since there is no Matter without some Spirit to Diversify it; and it is also granted that there is a Spirit of Man which doth Inform or Inspirit his Body; and not only Possess it as an Angel. Wherefore certeinly Material Spirits which are Connatural may also Consubstantiate the Matter. And we must understand that as all Created Entitys are Creatures, or Created by God; so they are

United into one *Genus* of their Common Entity; which though it be Metaphysical, yet it is not only a Notional, but a Real Universality of them all; whereby they are so Realy United and accordingly have some Physical Communion one with another, and all Conspire together against Nonentity. And so Matter and Spirits though very Different Entitys; yet because they are all Entitys, either Consubstantiate one another, as all Material Spirits, which cannot be Separate, nor Exert or Exercise their Qualitys or Operations without the Instrumentality of their Material Bodys, or otherwise Inform and Inspirit them, as the Immaterial Spirit of Man: which may be Separate, or not Separate from the Body therof, and Exert and Exercise some Qualitys and Operations by the Instrumentality therof, and some without it, as I shall shew hereafter; or at least as Angels, who though they be purely Immaterial Spirits, and have no such Consubstantial nor Compositive Union with the Matter, nor do Inform or Inspirit it, nor Operate by any Instrumentality therof; but are in that respect wholy Separate from it, yet have this Communion with it, that they are Localy in it, where they are and do Move from one Part or Place therof to another, and more or less suddenly and easily, and can not Move beyond the Universal Body therof; for then they might Wander in Notfinite and Endless Inanity, which as I have said is Pure Nonentity. And though Extension and Local Motion be Properly of the Matter, yet Material Spirits by their Conjunct State and Consubstantiation are Coextended with it, and all others are Conteined in it, and in this or that Part therof, and Move from this or that Place therof, according to the several Spheres of their own Substantial Activitys; whether they be more United unto it by a Conjunct Consubstantiation, as Material Spirits; which are in the Matter like Inherent Light in the Lucid Body, and in so much therof as it doth Inherently Illuminate, or less and without any such Conjunct Consubstantiation, as the Human Spirit, which is in the Matter as Light in the Diaphanous Air which it requires to Illuminate; or otherwise as Angels, which are in it as Magnetical Emanations in any *Medium*. And accordingly Material Spirits are most Powerful in their Center, but Immaterial Intirely Equal in their whole Sphere. Now wheras some affirm that Substantial

Spirits,

Spirits, and all their Spiritual Qualitys, are only Various Motions of the Matter; I shall according to my maner first endeavour to Understand, what is or may be Intended by the Motion of the Matter; which certainly can not be any Substantial Activity in it Self Distinct from the Matter; for then we might agree in the Thing, and should not differ about Terms: wherefore Motion of the Matter must be only an Accidental Affection therof, (like Extension and the rest whereby matter Extends it Self) and so in Effect Motion of the Matter is only Matter Moving it Self; Wheras it Naturaly tends to Rest, and Moves only in order therunto, as I shall shew heerafter; and this Moving must be only Local, becaus it is of the Matter from one Part or Place therof to another. But as I have shewed, that there are other Differences of things besides Local Separation; So there are other Motions, besides Local Motion; as every Mutation from one State to another, in Generation, Corruption, and the like; and in Intellection, and Volition, there may be such Spiritual Motions, without any Local Motion whatsoever, wheras Local Motion is only a Transition or passing from one Part or Place of the Matter to another, as I shall also shew heerafter: And now I may safely affirm that such Local Motion is only Local Motion, and neither more nor less, nor other: for as this Identical Proposition is most true, That Local Motion is Local Motion: So the Predicate therof being Adæquate to the Subject, it can be neither more nor less, nor other then the Subject. Now that this Local Motion which Properly belongeth to the Matter is an Instrument not only of Matter, but also of all Material Spirits (becaus they are Material, or Conjunct with the Matter in their Consubstantiation, and also in their Operation, as well as Extension, Figure, and the rest) I easily grant: but must wholy deny that Æther, Air, Water, Earth, or any other Substantial Spirits; Heat, Cold, Moisture, Driness, Vegetation, Sensation, and innumerable other Spiritual Qualitys are only Local Motions, one way, or other, or any way whatsoever: for then Local Motion should not be only an Instrumental Causality or Effect, of all those Spirits and Spiritual Qualitys, but the very Essence and Formality, or Formal Caus therof; which is most Uncouth and Inconceivable: for they are Formaly every one of them Such

as they are in themselves; as well as the Matter is Matter in it Self, without any Actual Motion: and so also Extension is Formaly Extension in it Self, and may Exist and be Such, without any Actual Motion: and Figure is Formaly Figure in it Self, and may Exist, and be Such, without any Actual Motion: and so any other Accidents of Matter: much more Spirits and Spiritual Qualitys: which I shall now very plainly prove. *In the Begining God Created the Heaven and the Earth*; and not only Matter and Motion: nor could Matter by MotionDiversify it Self in the Begining into Heaven and Earth; that is, as I have before explained them, Super-æther, Æther, Air, Water, and Earth: for no local Motion can be in an instant; but the Begining was only the First Instant, otherwise it should not be the First or Begining: Wheras Local Motion being from Place to Place, which are several Terms, must necessarily be in several Instants: and most Probably there was no Local or any such Natural Motion in the first *Chaos*, but only the Spirit of God Supernaturaly Moved on the face of the Waters. Also if several Local Motions were the Formalitys or Formal Beings of all Spirits, and Spiritual Qualitys, then they should not be before nor after, nor any longer, then the Local Motion doth continue: for the Formality of any thing is the very Specifical Being therof; (as Wind which is indeed only *Aer Motus* continues no longer then the Motion) and Nothing can be without the Specifical Being of it Self; otherwise it should not be what it is. Wherefore I suppose I may set this down as another Infallible Canon (according to which also I may safely proceed) that Whatsoever Actualy Exists without somthing which doth not then also Actualy Exist, must Realy differ from it; otherwise the same thing should Actualy Exist, and not Exist at the same time, which is Contradictory, and Impossible. And thus as I have proved Substances, which did Actualy Exist in the Begining, to differ Realy from Accidents, which did not then Actualy Exist; So particularly Spiritual Substances and their Qualitys, which do or may Actualy Exist without any Actual Local Motion, must necessarily be Realy Different from it. And this is most Sensibly Evident that they may so Exist, and be, without any Local Motion; and when they are in Local Motion, are Commonly rather Causes therof, then Caused by it; and so they Cause

Motion

Motion in the very Matter, which of it ſelf would Perpetualy Reſt in the Center, and due Poſition of it Self, as I have ſaid, and ſhall heerafter prove, and is Diſturbed and Moved by the *Potentia* of Spirits, which alter the Natural Poſition, Figure, Denſity, and Gravity therof: and Properly it hath no Natural Motion of it Self, but only to reſtore it Self unto Reſt. Nor can the Matter, and Motion, and any or all the other Accidents or Variations therof, Formaly Cauſ the Spirits, or Spiritual Qualitys: but are only Inſtruments, and fit Bodies therof, which they form for themſelves. Take Wax, and Move it this Way, or that Way; or Mold it into this, or that Figure; or Diſcind it into any Threads or Corpuſcles, or Mechanicaly Vary the Matter therof how you will; yet it will ſtill be Wax, as well as every part of Water is Water; Unleſs there be alſo ſome new Generation, or Corruption, therof by Spirits, and Spiritual Qualitys, as I ſhall ſhew heerafter. Wherefore that which ſome call Texture, whether Extrinſecal, as Figure, Poroſity, or plain Interweaving of Threads or Filaments, and the like; or Intrinſecal, as Denſity and Rarity, (which indeed are the only true Intrinſecal Textures of Bodys and yet are wholy denied by our Textorian Philoſophers) as well as Local Motion, is only Inſtrumental, and no Formal Cauſ, or Being, of any Spirit or Spiritual Quality. And ſo take Common Water and Spirit of Wine, Vitriol, or any ſtronger Spirits; and ſetting them in their ſeveral Veſſels one by another, Inſpect them with a Microſcope; and ſee if you can diſcern any ſuch Proportionable and Conſyderable Difference of their Extenſion, Figure, Denſity, Gravity, Local Motion, or any Corporeal Texture whatſoever, as there is of their Spirits, and Spiritual Qualitys. Or take any Æthereous Globules, or *Materia Subtilis*, Emittent, Tranſmittent, or Remittent (if you can tell where to find it) or the moſt Subtile and Pure Air, which may be had on the Top of the higheſt Mountain, and which is Common Matter as well as any other, and putting this Matter into any Windgun, Airpump, or *Expanſor*, or any ſuch *Torcular*, or other Rack of Nature whatſoever, or applying to it any Chymical Fire, or Heat, or Salt and Snow, or what you will, and vex it how you will; and try if you can force it to Confeſs it Self to be any other thing then Air, or Extort from it all, or any of theſe Spi-

ritual

ritual Diversifications, or such as may be Effected by the like Experiments made of Vapor, Water, or Earth, or any parcel or part of the Terraqueous Globe, and *Cortex* therof. Which God having made to be the Native Countrey, and Region of *Animals*, hath also Impregnated with such Material Spirits, and their Spiritual Qualitys, which he did first Produce, and still may be Produced out of them. Wherefore since Matter and Spirits do thus Differ, not only in our Mind and Reason, but in their own Natures, I Conclude them both Realy to Be, and Realy to Differ one from the other: and not to be only Matter and the Motions therof.

VIII. Accidents are either Common, or Proper; Common Accidents are such as were Concreated, and Actualy Existed together with the Substances in the Begining, and without which no Substances, or any Created Entity whatsoever, can Actualy Exist: as all Quantitys; whether discrete, as Number: for every Creature that is whatsoever it be, must also be Numerable. Or Successive as Duration: for every Creature that is, whatsoever must also be Durable, or Temporary. Or Consistent, as Extension; which though it be in it Self Proper to Matter, yet as the Matter of the whole World is a Common Matter, so as I have shewed, it doth Coextend or Contein all Spirits, and every Creature that is in Heaven or Earth must necessarily be Localy therin, that is, in the Universal Body of the Matter, or *Ubi* therof, and in some Part or Place therof; that is, it must be there where it is, and no where elf at the same Time. Proper Accidents are such as Originaly Flow from, and Subsist in their Proper Substances: as Consistent Quantity, Extension, Figure, Density and the rest in Matter; and Spiritual Qualitys in Spirits. Again these Simple Accidents may be either Compounded together, or Several; and yet mutualy Relating one to another, and Such Relations may also be Real; as First and Last in Successive Quantity, or Time: for they Realy are Such in the Successive Nature therof; which otherwise should not be Successive; and are not only Notional, such as First or Last in Consistent Quantity, or Extension; for they are not Realy such in the Consistent Nature therof; becaus it is Consistent altogether; and so the First may be Last, or the Last First, according

to

to our Notion and Institution therof. Also there are other more Complex Relations which may likewise be Real; either Mathematical; as a Triangle and three several Lines are different things, or Physical, as Beauty, which is a Relative Conformity of several Lineaments and Colors to the Physical Law therof. Or Moral, as Virtue; which is a Relative Conformity of Actions, Modes and Circumstances to the Moral Law therof. Or Theological, as Piety; which is a Relative Conformity of Actions Modes and Circumstances to the Theological Law therof, and the like: which being more Complex, are also more Curious and Excellent; and the Relative Conformitys therof are Not only Real, but also the Excellencys and Perfections of those Realitys wherin they Relatively and Realy Subsist. And this Relative Reality, though it doth Subsist in the particular Entitys wherof they are the Relations, yet doth Consist in the very Relative Conformity therof: for their particular Entitys being Inverted, will vary them, as a Triangle may so be made a *Zeta* or *Pi*, or render that which was Beautiful Deformed, and that which was Virtuous Vitious, and that which was Pious, Impious. And heer I shall Conclude with this general Observation, That though Substances Excell in Entity, becaus they Subsist in themselvs; yet Accidents Excell in Bonity, becaus they Perfect their Substances. For such indeed was that great Difference between the first *Chaos* and the six Days Works Perfected therin.

SECTION V.

And the Earth was without form and void. And Darknes was upon the face of the Deep.

EXPLICATION.

The Elementary Globe of Earth, Water, Air, and Æther, was first Created Inform, and Inane; without any of those Actual Compositions, Mistions, Figures, and Virtues, which were afterward Produced in the Six Days.

ILLUSTRATION.

1. *Of the fower Elements.* 2. *Of the* Chaos. 3. *Of Quantity.* 4. *Of Number.* 5. *Of Time.* 6. *Of Extension.* 7. *Of Figure.* 8. *Of Porosity.* 9. *Of Density and Rarity.* 10. *Of Gravity and Levity.* 11. *Of Rest and Motion.* 12. *Of Place Space and Vacuity.*

1. WE have heer a farther Explication in the Text itself of the Heaven and Earth Created in the Begining. Wherof it is again said, That there was an Earth, Comprehending also the Water, as I have before shewed. And the Water is heer called Deep; which generaly in the Hebrew Style signifys Deep Water, or Sea (and heer the Element of Water) like *Altum* and *Profundum* in the Latin. Also the Waters are expresly mentioned in the following Sentence. But Earth and Water were not first Created such a Terraqueons Globe

Globe as now they are, and were afterward so Divided and Disposed in the Third Day, and then first made to be such an Ocean of Waters and Dry Land both appearing together, and composing one Surface and Circumference of their common Globe; for that was the very Work of the Third Day. Wheras the Psalmist saith of this first Creation of the Earth, *Thou covered'st it with the Deep as with a Garment.* And the same is implied heer in these words, *And Darknes was upon the face of the Deep*; that is, of the Waters, which first covered the Earth; and not Immediately upon the face of the Earth, which was then covered with the Waters. Also the Darkness, which was the Antecedent Privation of Light, doth imply the Informity and Inanity, both of Æther, which is the Elementary Fountain of Light, and of Air, which is the Vehicle therof to the Terraqueous Globe; and that as the Water was Created above the Earth, so they above the Waters: for it is said the Darkness which was then in them was upon, or above the Waters. And so God saith to *Job* concerning the Sea, *When I made the Cloud* (that is the Dark Air) *the Garment therof and thick Darkness a swadling Band for it.* And so also was the Æther, from which the Light was afterward Emitted through the Air to the Terraqueous Globe, above the Air. And this Situation of the Elements may plainly appear by the Order of the Succeeding Creation: wherin the Æther, which is higheſt and next to the Superæther (which as I have said probably was perfected in the Begining) was first furnished with Light, and then the Air with Vapors, and lastly the Terraqueous Globe with Vegetatives, in the Three first Days. And so again the Æther with Starrs, and then the Air and Water with Fowls and Fishes, and lastly the Earth with Beasts, in the Three last Days. Also I collect from this Original Situation of the Elements that their Several Bodys of Matter were Proportionable and Conformable therunto; that is, the Matter of Earth was most Dens, and consequently most Grave, and therefore Lowest; the Matter of the Water less Dens, and consequently less Grave, and therefore above the Earth; the Matter of the Air more Rare, and consequently more Light, and therefore above the Water; the Matter of the Æther more Rare, and consequently more Light, and therefore above all the other Elements, and next to the Su-

perætlier which is moſt Rare, as a fit Habitation for pure Spirits. And that as every Element had its Proper Body of Matter, ſo alſo its Proper Elementary Subſtantial Spirit Pure, and Unmiſt in the firſt Creation therof. And it was the Work of the Spirit of God Moving upon the face of the Waters to Prepare and Prediſpoſe them by fit Miſtion and Temperature of them all; and thereby to Produce their Proper Qualitys out of their Potentialitys into Act, Gradualy and Succeſſively. And that their Potential Qualitys, and alſo all other Simple and Primitive Subſtantial Spirits, not only Elementary, but in and with them Vegetative and Senſitive, and all their Potential Qualitys, were Created in the Begining together with the Matter: that is, Vegetative Spirits, and Senſitive Spirits of Beaſts in the Earth and of Fiſhes in the Water: for ſo it is ſaid, *Let the Earth bring forth Graſs*, &c. and again, *Let the Earth bring forth the Living Creature after his Kind*, &c. and ſo alſo, *Let the Waters bring forth abundantly the Moving Creature that hath Life*, &c. which plainly implys, that theſe Spirits were in them before, otherwiſe they could not ſo bring them forth. And they were then Latent in thoſe Elements Reſpectively, which are Predominant in their *Compoſita*.

II. Thus was the Inferior Globe of theſe fower Elements firſt Created, Inform, and Inane; which is more Emphaticaly expreſt in the Original Language then can be rendred in any other. The Author of the Wiſedom of *Solomon* calleth it *Matter without Form*: that is, without any Corporeal Formoſity, or any Miſtion or *Forma Miſti* as they term it. Both Greeks and Latines generaly call it *Chaos*; and have preſerved the Hiſtorical Tradition therof, which they received from Antiquity. But they ſeem alſo to Comprehend in their *Chaos* the Superæther as well as all the Elements, or otherwiſe to have had no knowledg therof. Alſo they Confound all together in one *Congeries*: and thence have fanſied that the fower Elements had their Actual Qualitys Exiſting therin in their higheſt Degrees, and that there was Extreme Diſcord and Enmity among them. And ſo *Empedocles* and others make *Lis* and *Amor* Original Cauſes of all things; which were afterward Comtempered therin: and the Poet accordingly;

Aqua

Aque Chao denſos divûm numerabat Amores.

But upon the Review of our Divine Hiſtory, as I find no farther mention of the Superæther in any of the Works of the Six Days, and therefore conceiv it to have been Perfected in the Begining and firſt Creation therof, (for ſo it is ſaid of it; *Whoſe Builder and Maker is God*, that is more Immediately and only by a Proper Creation therof, without any Mediate Preparation Prediſpoſition and Miſtion, as of the Elements and Elementary Natures, and ſo that it was no part of this Elementary *Chaos* which was afterward Perfected in the Six Days) ſo alſo I rather conceiv that there was only Imperfection in the firſt *Chaos*; and that all the firſt Elements were firſt Created in their ſeveral Situations in Reſt and Peace without any ſuch Diſcordant Confuſion, which is reſerved for the laſt Diſſolution and *Gehenna*. And the Hebraical words, Inform, and Inane, ſeem rather to infer ſuch an Emptineſs and Privation, then any Poſitive Contrariety of Qualitys then Actualy Exiſting in it: and it is ſaid expreſly, that there was Darkneſs, or *Puræ Tenebræ*, therin, without any Light; and ſo probably no Heat; which if it had been Actualy Exiſting in ſuch Extremity therof might have prevailed over the reſt, as it ſhall in the laſt Conflagration; or at leaſt would have cauſed the Vapors to aſcend from the Waters before the Second Day; if the Air had all been ſo prepared by Miſtion and the Actual Qualitys therof: But probably there were no ſuch other Qualitys then Actualy Exiſting: for if not Heat, then conſequently not Cold, which is the Contrary therof. And the Earth is not Denominated Dry untill the Third Day; and if there were before no Drineſs, then conſequently no Moiſture; and ſo of the reſt. And the Author of *Eſdras* ſaith, *There was Silence on every ſide*, without any Sibilation or Tumult of Heat and Cold or the like. And though not only Matter, but the Created Subſtantial Spirits of the fower Elements and others, did then ſo Actualy Exiſt in the Begining when they were firſt Created, and the Heavens or Æther, and Air, and Earth, or Water and Earth, were thereby then ſo Denominated; as I have already ſhewed; yet their firſt Simple Qualitys, Heat, Cold, Moiſture, Drines,

and others, which are Accidents, and Subsist in their Substances and were then also Created first in their Potentiality; did not Actualy Exist, but were afterward Produced out of their Potentiality into Act in the Six Days. And the Elements, though Created Pure and Unmist severaly in themselvs, and separately in their own Spheres, yet were Miscible, and their Natural Perfection was to be Mist; and so it was accordingly performed afterward: and by that very Mistion and Temperature their Proper Qualitys were Produced out of Potentiality into Act, which otherwise could not Actualy Exist severaly by reason of their own Vehemence and Extremity. And certeinly there are such Contrary Qualitys, which are not only Degrees or More or Less of the same Mist Quality (as there are Degrees of Corporeal Quantity) which very Contrariety by a fit Mistion and Temperature doth mutualy Qualify them, and so Produce them by Degrees out of their Potentiality in Generation; and the Excess of either of them doth again destroy the other in Corruption; and thereby also would destroy itself if it were not so Tempered by the Contrary. And I thus judg therof, becaus otherwise there could be no Mistion or Temperature of Contrary Qualitys in their Actual Extremitys, which would destroy one another: but they are not so Actualy Contrary in their Potentialitys (becaus then they are only Potential) whereby they are easily Mist at first, and so proceed by degrees to be both Actuated together in their mutual Mistion and Temperature. And this Order of Generation and Corruption is the very Cours of Nature that was ordeined in the Six Days. And as in the Begining none of these Qualitys did Actualy Exist in their own Vehemence and Extremity, so never since can either of such Contrary Qualitys Actualy Exist without the other which should so Temper and Qualify it. Also all Secondary Qualitys which are Compounded of such first Simple Qualitys cannot possibly Exist without such Composition and Mistion, becaus their Compound Nature is to be Mist of others. But though the first *Chaos* was thus Inform and Inane, without any such particular Figures of Bodys, or Spiritual Qualitys, or any such Substantial or Accidental Mistion or Composition; yet as the Matter and several Elementary Spirits were severaly Consubstantiated therin, whereby they were

then

then Actualy Heaven and Earth, though not such as afterward, and as now they are; So also we may not conceiv them to have been without any Actual Accidents whatsoever; for they must necessarily have those Common Accidents which were Concreated with them, wherof I have formerly discoursed, Actualy Existing; becaus no Created Substance whatsoever can Exist or Be without them, and the matter had the general Accidents therof Actualy Existing in it. And of these and the Products therof both Common and Proper to Matter, as they were Concreated with it, or wherof it was capable, I shall now proceed to discours.

III. And first I shall consyder Quantity generaly: which though it be severaly and Specificaly Threefold, Number, Time, and Extension; yet all of them are Genericaly One, or that which we by one common Name call Quantity: and they are so One, not only Nominaly or Notionaly, but Realy and Physicaly; as shall appear by the Real and Physical Analogy and Confederacy that is between them; which as it is most Proportionable and Regular in itself, so if it were rightly consydered in all Statike Machins or Engines, any Artist might thereby without the trouble and charge of Experiment set down in his Mind or Paper before hand what the Effect and Execution will be: and all particular Errors in that Art proceed from the Universal Error or Ignorance heerof. As one saith of their various Essays of a Perpetual Motion; that they have all proved vain and ineffectual, *Non rite observatis Proportionibus*: for what is gained by one Quantity will be lost by others: as what is gained by Distances from the Center, Multiplication of unequal Wheels, and the like, is again lost in the Total Summ of the whole Account of Proportions, in Time, Number, longer, or more Circumvolutions, aad the like; which at last cast up together will amount to no more then a Balance, or *Æquipondium*: and these several ways are only several Variations of the Quantitys; which yet may be very useful and advantagious, accordingly as we have more or less Weight or Power, or more or less Time, and the rest, to imploy and lay out in the Operation. Such are the *Romana Statera*, or French Beam, the Leaver, the Skrew, the Pulley,

ley, the Snake Wheel, Cranes, and the like. And the common Culinary Jack may plainly discover the use and advantage therof, in Diminishing the Burden of the Weight by Multiplication of the Distances and Revolutions; as if the Weight were divided into so many several Parts or less Weights as it hath such Proportions in the Whole, and one of them only were to be Moved at one Distance and by one Revolution. Or the Burden of the Weight in a contrary way may be Multiplied by Diminishing the Distances and Revolutions. Or there may be a delivery of all at once, as in Catapults, Balists, and the like. And of all these the whole Account will ever be Equal, as I have said (allowing only for Frictions and Attritions, and the like) And this wonderful Analogy of Quantity is not only thus useful in Mechanical Practice, but also in Philosophical Contemplation; which I shall now accordingly Improve. And becaus, as I have formerly observed, Number is the Discerner of both the other Quantitys, and most Discernible in it self, I shall heer begin with it; and thereby endeavor to Explicate the most Indiscernible Mysteries of Time and Extension: though I esteem no Quantity Mystical, or Cabalistical, in Virtue, or Signification; but only intend such Natural Mystery's therin as are Incomprehensible to us and our Reason.

§. IIII. The first Principle of Number is an Unit, which is Unity in it self, and Disunity from others; wherof all Number doth consist: but it is no Number in it self, being only an Imperfect Principle therof: for all Number is Quantity Discrete, and such Discretion must necessarily be of more then One: Yet all other Numbers are only so many Ones, but One is most Intirely and Individualy One in it self, having both the same Root and Square. And it is Analogous to an Instant, or Point, but Different from both, and each of them one from another. For an Unit may either severaly Exist, as in one Instant; or Coexist, as in many Points, but an Instant can only Exist severaly and Successively; for Past, Present, and Future, cannot be otherwise then several and Successive; and a Point can only Coexist, for it cannot be otherwise then in a Body which is Consistent. Also as all Number is only so many Ones, becaus it is Discrete;

so

ſo it is only ſo many ſeveral Ones Diſcreted one from another: Yet as it is ſo many Ones Diſcretely, ſo it may be alſo one Many Complexively, which yet is not Properly One, or a Unit; for that cannot be Divided or Diſcreted, nor hath any Halvs, Quarters, or other Fractions whatſoever, which are indeed ſo many Ones in themſelvs, wherof a Proper Unit is not capable, but any Number is only one Many Complexively, which is an Improper Unit, and Properly many Ones; and may therefore be ſo Divided and Diſcreted. So that indeed there is no Fraction or Surd in Number rightly conſydered in itſelf, but only in Time, or Extenſion, or other things Numbred thereby: as Weight, Money, and the like; wherof if any can give the Intire Proportions, he hath alſo the Complete Number, reſulting from the thing itſelf. Thus of all theſe three Concreated Surveiors of Nature, which we call Quantitys, Number is the moſt Perfect and Regular, and therefore Arithmetike is alſo moſt Perfect and Regular, wholy compoſed of Rules, and not, like Geometry, of Innumerable Problems and Propoſitions, which are only as ſeveral Accounts of ſo many particular Sums. And indeed it is ſo Regular and Complete, that I know not what may be added to it farther, except perhaps ſome more ſpecial Rules for greater facility and expedition, wherof I may heerafter occaſionaly give ſome other Inſtances, and ſhall now only mention for an Example the common Inſtance of the Changes of any Number uſed in Bells, Anagramms, or the like. Wherof there is this ſpecial Rule: Multiply the Product of the laſt Number Multiplied by the next Simple Number, As Once One is One; Two Ones are Two; Three Twos are Six; Fower Sixes are Twenty fower; Five Twenty fowers are One Hundred and twenty; Six One Hundred and twentys are Seaven Hundred and twenty; and ſo Indefinitely: and ſuch alway will be the Changes therof. The Reaſon wherof is very plain and evident; which is, that Six will make Six ſeveral Fives by Changing or ſetting aſide one every time, and ſo conſequently it conteins the Six ſeveral Products of Five Multiplied as aforeſaid; and ſo the reſt one of another. Certeinly Arithmetike is not only moſt Regular in it ſelf; but alſo moſt Uſeful in other Arts: becauſ Number is the Meaſure of all Finite things which God hath Created to be Meaſured thereby, even Time and Extenſion itſelf,

(and so is Time of Extension, but not contrarily) and so there is great Use therof in Chronology and Geometry: and it is indeed the most excellent Mathematical Science, though we have generaly appropriated the very Name of *Matheſis* to Geometry; becauſ it doth more exerciſe Human Wit, which is better pleaſed with Curious Difficultys, then that which is more plain and facile, though no leſs true and evident.

V. The first Principle of Time or Duration is an Instant, which is only the very Present while it Actualy is, and so excludes both Past and Future, which cannot possibly Exist together with it; and yet as it passeth away continualy maketh a Succession of Instants, and that Succession is Time or Duration. But every Instant doth severaly Exist in itself, and is not Successive, and consequently no Time or Duration; as an Unit is no Number: for Snccession is of one after another, and therefore of more then One, but an Instant is only One. And so the Begining or First Instant did necessarily Exist severaly; for there was none before it, otherwise it should not have been the Begining; and the Next Instant was after it, otherwise it should not have been the Next: and there is the same Reason of all the Instants which have been since, or ever shall be. Whereby we may Apprehend the Nature therof, though we can never Comprehend it, being swifter then any Thought which might Comprehend it. And becauſ Instants are of so Minute a Nature, therefore they are not only Incomprehensible, but also Innumerable to us, and though in other respects Analogous to Units and Points, yet therefore not so Discernible as Units; and almost as Incomprehensible as Points, wherof I shall discourſ in the next Paragraph. And yet certeinly there are such Instants severaly Existing as well as Units, for all Time or Duration is composed of them, as well as Number of Units. And we may not deny any thing that Realy is in Nature, and which we can Apprehend, though we cannot Comprehend it. And indeed we may deny Time and Duration itself as well as Instants, wherof it is apparently Composed, becauſ it is only the Succeſſion of several Instants, which do and muſt necessarily Exist severaly; and therefore not only Realy are, but are Realy several in themselves; becauſ only the Present Instant now Actualy is, as I

have

have ſhewed, and yet what they are, or how Time or Duration is Compoſed of them, doth farr exceed all Human Reaſon, and the utmoſt Comprehenſion therof.

VI. The firſt Principle of Extenſion is a Point; which is only an Indiviſible Atom, and no Extenſion in itſelf; becauſ Extenſion is of Part beyond Part, but an Indiviſible hath no Parts, otherwiſe it ſhould be Diviſible into them. And becauſ it is the Principle of Extenſion, which is Quantity Conſiſtent, therefore it muſt alſo Conſiſt, or Coexiſt, and cannot Exiſt ſeveraly. And ſo though it be Analogous to Units and Inſtants in other reſpects, yet by reaſon therof it is more Incomprehenſible, not only then Units, but alſo then Inſtants; becauſ Inſtants do Exiſt ſeveraly, and therefore may be truly Apprehended as ſeveral, and by themſelvs; but Points only Coexiſt, and therefore may not be truly Apprehended as ſeveral, or by themſelvs, but only as Conſiſtent with others in Corporeal Extenſion, and ſo are wholy Indemonſtrable. Nor is a Point the only Indemonſtrable thing in Mathematical Science, but the very Cauſ and Ground of the Indemonſtrability of all other *Aſymmetra* or Incommenſurabilitys. And to Demonſtrate this Indemonſtrability I ſhall offer this Propoſition, To reduce three ſquare Inches (or any *Talia qualia*) to a Square, or indeed any others wherof there is no Square Root; which I ſuppoſe can never be Squared by any Diviſion or Subdiviſion whatſoever. Yet I have a Rule whereby to reduce the Three Square Inches to a Square wanting only one Portion ſtill leſs and leſs Indefinitely, which is this; Firſt I conſider the next Square to Three which is Four Inches, wherof Two is the Square Root; and then I place the three Inches Rectangularly, or in the form of a Rectangular *Gnomon*, ſo as to leav a Vacant Space which ſhould be ſupplied by a Fourth Inch: and I conſyder the Proportion between this Vacant Space to be ſupplied, and the two Lateral Inches or Complements on each ſide of it from which I muſt borrow to ſupply it, which is as One to Two; and then to make a *Medium* between the Suppliers and Supplied I add Two more to thoſe former Two, in all Fower; and I multiply Fower by Fower, which make Sixteen: and accordingly I divide each of the two Lateral Inches or Complements into Sixteen Portions;

that is, Fower Rows of fower ſuch Portions, in each Lateral Inch; and then borrow one of theſe fower Rows from each of them; that is, two Rows of fower ſuch Portions, in all Eight ſuch Portions, to ſupply the Vacant Space or *Gnomon*; whereby there will remain now Three Rows, and therof only three ſuch Portions on either ſide of the Lateral Lines of the Complements, and each of the whole Rectangular *Latera* will be One Inch and Three quarters in length; according to which the Vacant Space or *Gnomon* now remaining is to be ſupplied; and therefore I Multiply Three by Three, which make Nine ſuch Portions to be ſupplied, and I have only, as I ſaid, Eight ſuch Portions to ſupply them; and ſo there will now remain a Vacant Space or *Gnomon* of one ſuch Portion, which, as I ſaid, is the Sixteenth part of an Inch. Again, I conſyder the Proportion between this ſecond Vacant Space or *Gnomon*, which is now to be ſupplied, and both the two upper Lateral Rows or Complements therof, from which I muſt borrow to ſupply it, wherof each doth now contein Six ſuch Portions; that is, Fower which were in it before, and Two added to it, in ſupplying the firſt Vacant Space or *Gnomon*, and wherof the ſecond Vacant Space or *Gnomon* was to be the third: ſo now I have Six and Six ſuch Portions, in all Twelv; to which, as before, I add Two, in all Fourteen; and I Multiply Fourteen by Fourteen, which make one hundred ninety ſix; and ſo I divide each of theſe laſt Portions into one hundred ninety ſix leſs Portions; that is, Fourteen Rows of fourteen ſuch leſs Portions of each of the former greater Portions; and then I borrow one whole Row therof from each ſide; that is, Six and Six, in all Twelv fourteen ſuch Portions, which make one hundred ſixty eight, to ſupply this ſecond Vacant Space or *Gnomon*, wherof there wil now remain Thirteen ſuch leſs Portions on either ſide of the Lateral Lines of the Complements; and each of the whole Rectangular *Latera* will be One Inch and three quarters, wanting a fourteenth part of a quarter in length, according to which this ſecond Vacant Space or *Gnomon* is now to be ſupplied: and therefore I Multipy Thirteen by Thirteen, which make one hundred ſixty nine ſuch leſs Portions; and I have only, as I ſaid, one hundred ſixty eight ſuch Portions to ſupply it. And ſo there will now remain a third Vacant Space or *Gnomon* of one ſuch leſs Portion, which, as I have ſaid, is the one hundred

ninety

ninety ſixth part of of a ſixteenth part of an Inch, that is the three thouſand one hundred thirty ſixth part of an Inch, wherof the Square Root is Fifty ſix, which is fourteen fowers; wheras the Square Root before was only one fower; which is a very great Decreaſ of the Vacant Space or *Gnomon*. And according to this Rule the Vacant Space ſhall ſtill decreaſ Proportionably, *Toties Quoties*, and yet a leſs Vacant Space ſtill remain, and the Square never be Completed. And this Rule is grounded upon another ſpecial Rule in Arithmetike; which is, That if of any three Succeſſive Numbers the greateſt be Multiplied by the leaſt, it will produce one leſs then the Midle Number Multiplied by itſelf. And heer it is made ſuch by adding alway Two to the Complements according to this Rule. As before in theſe Examples, Fower Multiplied by Two made Eight, which was one leſs then Three Multiplied by Three, which made Nine. And ſo again Fourteen Multiplied by Twelv made one hundred ſixty eight, which was one leſs then Thirteen Multiplied by Thirteen, which made one hundred ſixty nine. And becauſ ſome may ſuppoſe that though ſuch Squares can never be Completed by this Rule, yet it may poſſibly be done ſome other way, (which I am confident cannot be, and that none by any other can come neerer to it then by this Rule) yet for their farther ſatisfaction heerin I ſhall offer them ſeveral other confeſſed *Aſymmetra*. As the Proportion between any Diagonial Line and the Lateral Line of the ſame Square. And I have another Rule whereby alſo ſuch an Aſymmetry may be reduced to one Portion ſtill leſs and leſs Indefinitely, and yet ſhall never be Completed: which is this, Firſt I conſyder of what other Square the Diagonial Line of the Square given would be a Lateral Line. As for example; if the Square given be Fower Inches, wherof the Square Root is Two, I add that which is the only Square Root before it, and that is One; and then I ſay, One and Two make Three, which Square Root Three being Squared makes Nine Inches, and Nine is doubly as much as Fower, more One. Now I know that the Lateral Line of a Square which conteins doubly as many Inches as the Square given is the Diagonial Line of the Square given. And ſo I ſay, the Diagonial Line of the Square of fower Inches which was the Square given is Three Inches in length, Diſquaring one from the Square of Nine Inches. Again I add together both the Num-

bers of each of the former Square Roots which were Two and Three in all Five, which must be the next Square Root according to this Rule: and then let the Square therof be given which is Twenty five. Now to find the Diagonial Line therof I again add to Five the first Square Root of the first Square given, which was Two, in all Seaven; which Square Root being Squared makes Fourty nine; and Fourty nine is doubly as much as Twenty five, less one. And so of Five and Seaven, which make Twelv; and Five and Twelv which make Seaventeen, and the rest according to the aforesaid Rule Indefinitely; wherof the Dysproportion will be Interchangably One more, and One less. And the Reason of this Rule is, that wheras the Diagonial Line of any Square alway makes a Lateral Line of another Square conteining doubly as much as the former, there is no such Square Root wherof the Square doth contein doubly as much of the Square of any other Square Root whatsoever. And so the Proportion between any Line of an Equilateral Triangle and the Perpendicular Line therof will ever be Asymmetrous, becaus there is no Square Root of three Fourths of any Square, which is the Proportion between them. But the most known and common Instance of this kind is the Quadrature of the Circle, which though as the rest may still be reduced to a Proportion less and less Indefinitely, yet can never be Completed: *Curtæ nescio quid semper abest rei.* Now it is most evident that though these Proportions can never be thus Completed Mathematicaly, yet they are all Physicaly Complete in themselvs, as well as any others. And particularly that there is a Complete and Perfect Proportion between any Circle and such a Square wherof the *Diameter* of the Circle is the Lateral Line, that is of the Square Excribed; for apparently there is a certein Proportion between the *Perimeter* and *Diameter* of the Circle, and so consequently between the Circle and such a Diametrical Square, as I may so call it; becaus the *Diameter* of the Circle is the Lateral Line therof. Which Proportion though it can never be known nor expressed in Rational Number, yet we know according to common Rule, That if you Multiply half the *Perimeter* by half the *Diameter* of the same Circle, that is, if you suppose a Rectangular Parallogramm so made that the Length shall be equal to half the *Perimeter* of the Circle, and the Breadth equal to half the *Diameter* of the same Circle,

Circle, the Product or Rectangle ſo made will be equal to ſuch a Circle: and ſo if you Multiply a quarter of the *Perimeter* by the whole *Diameter*, or a quarter of the *Diameter* by the whole *Perimeter*, which are tantamount. And thus you may meaſure the Arch Quadrant, or Semiquadrant, or more or leſs part of the Circle, as well as any Triangle; for ſo you meaſure only within the Angles, and to the Angles, and therefore the Angles which make the Excreſcential *Superficies* beyond the Circularity can make no difference in the one more then in the other. And from all theſe conſyderations of a Circle I find the Regular Proportion or Analogy between any Circle and the Square therof Excribed to be this; That as the *Perimeter* of the Circle is in Proportion to the *Perimeter* of the Square, ſo are the Square Inches of the Circle in Proportion to the Square Inches of the Square. Now that all this very large and tedious Diſcourſ may not ſeem Impertinent, I ſhall make that Improvement therof which I intended; and from it draw theſe Conſectarys. Firſt that Mathematicaly, or accordſng to our Mathematical Science, Extenſion is and muſt neceſſarily be ſuppoſed to be Diviſible into alway Diviſibles; becauſ by ſuch Mathematical Rules, as before, I can Divide and Subdivide it Indefinitely. Next that Phyſicaly, and in its own Nature, Extenſion is not, nor cannot be poſſibly Divided into alway Diviſibles; Becauſ, if there could be any ſuch Phyſical Diviſion and Subdiviſion therof Perpetualy, then ſuch Proportions ſhould never be Phyſicaly Completed. Laſtly, that ſince there is Actualy ſuch a Phyſical Completion, which, as I have ſhewed, can never be effected by Diviſibles or any Extended Parts of Extenſion, therefore it muſt neceſſarily be by ſomwhat not Diviſible, but Indiviſible and not Extended in itſelf. And heer I ſuppoſe we may a while make a Stand, and gaze with Admiration and Amazement at theſe wonderful Myſterys, which have hitherto puzled, and will ſtill puzle the greateſt Wits of the World: neither ſhall I preſume to abſolv them; but only offer what ſeemeth to me moſt probable. Certainly, *Vero nihil verius*; for all Verity is one and the ſame in itſelf, and with itſelf, and cannot Contradict itſelf. Wherefore that which is Mathematicaly true cannot be Phyſicaly falſ; and that which is Phyſicaly true cannot be Mathematicaly falſ; but one or other of theſe ways of Demonſtration muſt be fallacious.

And

And for mine own part I ſhall rather believ Nature, which is the Art and Inſtitution of God, then any Mathematical Art or Inſtitution of Mankind. And I muſt ſuſpect our own Mathematical Art to be fallacious heerin, and the fallacy to ly in this; that becauſ we can eaſily diſcern Extenſion which is Diviſible, but cannot diſcern Indiviſible Points, we indifferently apply our Mathematical Rules of Diviſion and Subdiviſion both to Diviſible Extenſion and alſo to Indiviſible Points, not knowing where to ſtop, nor being able to diſcern between them; and ſo go on Perpetualy according to ſuch Mathematical Suppoſition, though there be no ſuch Perpetual Proceſs in Nature. Which is as if we ſhould ſo proceed beyond an Unit, and divide it into Halvs, Quarters, and the like. Or as if becauſ I can Divide fower Angels into two Twos, and again Subdivide each Two into two Ones, which I may truly do; I ſhould alſo therefore proceed to Divide each one Angel into Halvs, and Quarters, and the like Perpetualy, which I may not likewiſe do; becauſ each Angel is Indiviſible in himſelf, and in his own Nature, and hath no ſuch Halvs, or Quarters; and yet Arithmeticaly I might ſo go on to Divide and Number, if I did not know the Angelical Nature to be Indiviſible. And though we know a Point to be Indiviſible, yet becauſ it is ſo Indiſcernible that we know not where to find it out, we go on ſtill ſo to Divide and Subdivide perpetualy according to our Mathematical Rules. And thus though it may be maintained by way of Argument that *Quantitas eſt Diviſibilis in ſemper Diviſibilia*, yet it is Invincibly confuted by a contrary Argument drawn from that very Perpetual Diviſibility of the Quantity, that is, the Impoſſibility therof; and on this I chiefly inſiſt; For if there were any ſuch Poſſibility of Perpetual Diviſion therof Phyſicaly and in Nature, though I eaſily grant it might never be actualy Future (as many Poſſibles ſhall never be Actualy in any future Time) yet I can never admit that there can be any Poſſibility of that which yet cannot Poſſibly be Actual, which they muſt affirm who hold the Contrary Poſition; and ſo indeed they very freely acknowledg, that it is ſo alway Potentialy or Poſſibly, but can never Actualy. But as Futurity of that which never Actualy ſhall be, is a plain Contradiction; ſo Poſſibility of that which never Actualy can be, is equaly Contradictory: for as Future, or Shall be, and Shall not be; ſo Poſſible,

or

or Can be, and Can not be, are Contradictory Terms. And all Poſſibility is the Poſſibility of being Actualy, and not of being Poſſibly or Poſſibility of Poſſibility, which is Childiſh and Nugatory, and only a Reduplication in Terms of the ſame Thing in itſelf. Nor is it only Contradictory in Terms, but alſo in the Thing itſelf: For we do not now diſcourſ of Quantity Succeſſive, wherin there may be a Perpetual Poſſibility of Succeeding Futurity; but of Quantity Conſiſtent, wherof all the Diviſible Parts, and Indiviſible Points, do and muſt neceſſarily Conſiſt and Coexiſt Actualy together in the ſame Preſent Inſtant, and not in ſeveral Future and Succeſſive Inſtants. Nor do we now diſcourſ Mechanicaly, or of any ſuch Mechanical Diviſion of a Body into leſs Wholes, or of the Poſſibility of ſuch Actual Separation of the Parts from the Whole Localy, but of the Actual Extenſion of Part beyond Part, according to the Nature of Corporeal Quantity as it is in itſelf, and the Mathematical Diviſion of the Parts in the Whole Extenſively: And ſo whatſoever, or howſoever many the Parts of that Extenſion given be, they are already and in the Preſent Inſtant Actualy what and ſo many as they are, and cannot be greater or more then they are. And I ſuppoſe no Mathematician doth contemplate the Local Diviſibility, which is Poſſible, but only the Extenſive Diviſion of the Parts, which is Actual in the Whole; wherin only they are ſuch Mathematical Parts; wheras being Localy Divided from the Whole they become leſs Wholes in themſelvs. And ſo ſuch Poſſibility is not at all to be regarded in this preſent Diſcourſ, but only the Actuality whatſoever it is; and then the Poſition thus rightly explained doth amount to this, That the Extenſive Parts Actualy in the Whole are Actualy Innumerable, not only to us, or by any our Mathematical Diviſion or Subdiviſion, which I have already granted; but alſo Phyſicaly, and in their own Nature, which is Impoſſible. For then the leaſt Extenſive Whole ſhould be equal to the greateſt; becauſe both have equaly Innumerable Parts in themſelvs; for Innumerable can neither be more nor leſs then Innumerable. Nor will it be evaded by ſaying that the greater Whole hath Innumerable greater Parts, and the leſs Innumerable leſs Parts; for Innumerable Parts, though never ſo ſmall will ſuffice to make any Whole whatſoever, though

never ſo great; becauſ Innumerable is Innumerable; and doth not only afford whatſoever may be wanting, but can never be ſpent or exhauſted. And becauſ every leaſt Part hath ſome Extenſion, and Meaſure therof; therefore the Whole of ſuch Innumerable Parts muſt alſo be Immenſurable which (as *Archimedes* hath demonſtrated in his *Pſammites*) is both Rationaly Impoſſible, and Mathematicaly Falſ. But whatſoever Notion Mathematicians may have of ſuch Diviſibility into leſs and leſs Parts Perpetualy, yet certeinly none can deny the groſs Whole of any Corporeal Extenſion given (whatſoever the Extent therof may be) to be Menſurable, and Finite; otherwiſe it could not be given, nor indeed Actualy be, as I have formerly Demonſtrated. And I am very ſecure of that Argument and of the clearnes and firmnes therof; however men may determin concerning this other Queſtion, which I have alſo proſecuted for a farther Diſcovery of Truth. And I muſt heer obſerve that not only Extenſion, but alſo Time, and Number, and whatſoever hath Parts; yea all Qualitys, and whatſoever hath Degrees; and all that is in any kind ſuſceptible of More and Leſs, may as well be affirmed to be thus Diviſible into alway Diviſibles. And ſo wheras Phyſicians make ſeveral Degrees of the fower firſt Qualitys, and Muſicians of Muſical Notes, and the Like, I can again Divide and Subdivide them Indefinitely aſwell as Extenſion; and Demonſtrate that there are the like Imperceptible Minims therin. And heer again we may ſtand and admire the Divine Wiſedom and Goodnes, which hath ſo Plainly manifeſted unto us thoſe Wholes, and greater Portions of Wholes, that are of any Uſe and Concernment, and without which Scales, Dials, and all Mathematical Inſtruments, and all Medicinal Compoſitions, and *Gamuths*, and the like; and all Symmetry, Temperature, and Harmony, had been unknown and unſerviceable to Mankind: and alſo accuſe the Vanity of our own Human Witt, which doth ſo Ambitiouſly affect to know and Curiouſly to pry into thoſe very Minute things, whoſe Uſefulnes is as little as their Proportion; and which God, to humble our Mathematical Pride, hath purpoſely conceled from us; and yet becauſe they are ſo Indiſcernible, therefore we more affect to Diſcerne them. For mine own part, as I am ſatisfied in knowing that there is a Circumference of the whole

whole Globe of the World, though I know not how large it may be; ſo alſo in knowing that there are ſuch Phyſical Points, though I know not their Minute and moſt Exile Nature. Yet I do alſo conceiv that as Extenſion is Terminated by Points, ſo the Diviſibility therof doth Terminate in Points, and that there are ſuch Phyſical Points as well as Phyſical Inſtants, and Phyſical Inſtants as well as Phyſical Units, though they be not equaly Diſcernible by us (and that Points are Points, and not only Notes, or Nothings, as ſome do affirm) And there is no Objection againſt the one, which may not alſo be armed and intended againſt the other, by ſuch Dividing and Subdividing Perpetualy, even beyond Points, Inſtants, and Units themſelvs, into Halvs, Quarters, and the like. And ſuch indeed is the common Objection, Of how many Points is the leaſt Corpuſcle compoſed? It may be as well demanded. Of how many Inſtants is the leaſt Minute of Time compoſed? which none can tell: though we can eaſily tell of how many Units, Two, which is the leaſt Number, is compoſed. And I demand of ſuch Curious Objectors, Of how many Extenſive Parts or Portions the leaſt Corpuſcle is compoſed? which themſelvs affirm to be Innumerable; though I deny it of Parts, and dare not affirm it of Points; becauſe it is Impoſſible: but only aſſert, that neither they can know of how many Parts, nor I of how many Points any Corpuſcle is compoſed. And this I ſuppoſe to be a ſufficient Anſwer to ſuch a Queſtion (for ſuch it is rather then an Objection) But for farther ſatisfaction, I ſhall conſyder a leaſt Corpuſcle, which muſt be Globular aſwell as the great Body of the whole World; (becauſ all Angles are Protuberant and render the *Superficies* unneceſſarily greater) and yet no Mathematician ever did, or ever can, aſſigne the whole Proportion in fact and conſequently not all the particular Portions of any Globe or Circle. Alſo every Corpuſcle, though never ſo litle, yet is a Body, having Longitude, Latitude, and Profundity; in all which the Points muſt Conſiſt and Coex ſt, and they alſo in the whole Body, otherwiſe it ſhould not be a Body: wheras though we know that a Body is compoſed of Longitude, Latitude, and Profundity, yet we know not of how many Long, Late, or Profund Lines, it is compoſed; becauſ though they Realy are, and are Realy dif-

ferent in Nature, yet they ſo Corporealy Conſiſt and Coexiſt that they can not be Localy ſeparated, but only in and with the Corpuſcles or Body. And ſo though Points Realy are, and are Realy Different in Nature, yet they alſo ſo Corporealy Conſiſt and Coexiſt, that they can not be Localy Separated, but only in and with the Corpuſcles or Bodys: and ſo though Mathematicaly we may conſyder them in their ſeveral Natures, yet we may not therefore conſyder them in ſeparate Exiſtences. Whereas generaly all the Objections are drawn from the Suppoſition of Points Separate, or at leaſt of Points Coexiſting only in Longitude, and the like, (which are only Imperfect Principles of Extenſion, as well as Points.) But I have ſhewed that Entitys may Realy Differ, though they are not Localy Separate, or Separable: and if they grant me Points ſo Coexiſting, not only in Longitude, but alſo in Latitude and Profundity, and the whole Corporeity of a Corpuſcle or Body (as they muſt, becauſ they do ſo Realy Coexiſt, and can not otherwiſe Exiſt in Nature) I can by that one Conceſſion ſolv all their Objections, which otherwiſe may ſeem as Unanſwerable, as Points are Incomprehenſible; being grounded upon the very Incomprehenſible Nature therof. And if they will not grant me that which is Phyſicaly and Realy true in itſelf, but argue upon falſ or feigned Suppoſitions, I ſhall not much care to Anſwer them; otherwiſe then I ſhould him who would argue upon a Suppoſition of Coexiſting Inſtants, Paſt, Preſent, and Future; by telling him plainly, that there is no ſuch thing in Nature: and yet there are Phyſical Inſtants Exiſting ſeveraly; and ſo, though there is not any ſingle Point in Nature Exiſting ſeveraly, yet there are Points Coexiſting in a Body. And I ſuppoſe that from this Fundamental Fallacy all the Fallacity of their Objections doth ariſe. But he who will rightly Philoſophiſe, or Theologiſe, muſt be very careful that in the Contemplation of ſuch things as are Incomprehenſible, or Infinite, though he may frame Comprehenſive or Finite Notions therof as Scaffolds whereby to build, yet he may not build upon them; but muſt again take them down, and reduce all ſuch Subſidiary Notions or Suppoſitions to the very Nature of the thing it ſelf, which is Incomprehenſible, or Infinite.

VII. Thus

VII. Thus though there be Realy in Nature Points, Lines and *Superficies*, yet the Suppoſition of any ſuch ſeveral Exiſtence therof, as we may Mathematicaly feigne and frame to our ſelvs, (and as ſome have ſuppoſed the whole-Body of the World to have been made by the Caſual Concurrence of ſuch Atoms or Points) is only Notional in our Reaſon and Mind, and not Real or in the Nature of Extenſion itſelf, wherof the leaſt Minim is more then one ſingle Point, yea it conteins in it Points Innumerable to us. And as there is no ſuch ſeveral Point, ſo alſo no ſeveral Line in Nature: for the leaſt Hair of the leaſt Mite hath not only Longitude, but alſo Latitude; becauſ it hath ſeveral Sides; and one Side therof is not the other, nor all one and the ſame with the Longitude. And ſo there is no ſeveral *Superficies* in Nature, having both Longitude and Latitude without any Profundity; for the thineſt Plate of *Muſcovy* Glaſs hath a double *Superficies* above, and beneath, and alſo others in the very Edges therof. Wherefore not only Points, but alſo Longitude, Latitude, and Profundity do neceſſarily Conſiſt and Coexiſt together; and all theſe make a Complete Extenſion or Conſiſtence of any Body. Now every Body, becauſ it hath Longitude Latitude and Profundity, muſt have ſome Figure which is the particular Shape or Module of the Extenſion therof, Reſulting from, and Subſiſting in that Extenſion (as a particular Property therof) Immediately, and Mediately in and by it in the Subſtantial Matter. Yet Figure Realy Differs from Extenſion; becauſ there may be ſeveral Figures of the Same Extenſion of the Matter which (as Statuarys ſay of their *Materia*, Wood, Stone, Wax, and the like) is capable of all Figures, Faces, or Forms whatſoever. The firſt and moſt ſimple Figure, and which indeed is moſt Proper to the Matter, is a Globe. And therefore this is the Univerſal Figure, and all other Particular Figures, as I have ſaid, are only the Protuberances and Enormitys therof, though never ſo Symmetrical and Conformable in themſelvs. And the Globular Figure is ſuch, becauſ it is moſt Intire and Uniting, wherof all others are only ſome unneceſſary Exceſſes, or Defects; and therefore alſo it is moſt Capacious; as may plainly appear by varying the *Perimeter* of any Circle (which hath nothing Excreſcential or Exceſſive

in itself) from the Circular Regularity therof, into any Angular Figure whatsoever, for so if you Inflect it into an Isoperimetrical Equilateral Triangle, the *Area* therof will be less then that of the Circle, as Six to almost Ten: and if you Inflect it into an Isoperimetrical Square (as Carpenters do in measuring Timber) it will be as Eleaven to almost Fourteen (which is their Girt Measure, and the true gain and advantage therof more then of such a a Square.) And so Proportionably if you Inflect it into any other Equilateral Polygon, though I doubt all will be found Incommensurable as well as the former. But yet I observ a Proportion or Analogy between the Circle and such a Square made of the *Perimeter* therof, or, as I may so call it, the Isoperimetrical Square therof, and the Square Excribed, which I have before termed the Diametrical Square therof; that is, As the *Area* of the Isoperimetrical Square of the Circle is, as I have said, in Proportion to the *Area* of the Circle as Eleaven to almost Fourteen, so the *Area* of the Circle is in Proportion to the *Area* of the Diametrical Square therof, as almost Eleaven to Fourteen. And though I conceiv that every Regular Figure is Perfect in its own kind, and none other so Perfect as it, in that Respect, and therefore Asymmetrous; yet I also conceiv that the Asymmetry or Disproportion between a Circle and a Square is rather from the Square, which is more Imperfect Compararively, then from the Circle, which is Absolutely the most Perfect Figure in itself: and though we commonly, as Carpenters, and other Mechanical Measurers, do rather Measure by the Square and Cube, then by the Circle and Globe, yet God and Nature work by them most Perfectly and Exactly; and so have made the World to be of the most Perfect Figure, which is Globular or Circular in the whole *Superficies* therof, not by Molding, Carving, or Casting, or any such Mechanical or Violent Formation therof, but by Natural Principles Created in itself For the whole Body therof being one Homogeneous and common Matter doth Naturaly Incline and Adhere to itself, having nothing Corporeal belides itself to which it may otherwise Incline or Adhere, or which may hinder or divert it from Uniting or flowing together into one most Intire Body in it self; which, as I have said, must be Globular, becaus a Body can not possibly be in a less Space or more United then in a Globe.

Globe. And this Union doth beſt preſerv and fortify its own Internal Entity in itſelf, and ſo againſt External Nonentity. Wherefore alſo all Material Spirits, which are Heterogeneous Subſtances, do thus Unite and fortify their own Specifical Natures againſt Ambient Heterogeneous Enemies, by caſting themſelvs, and thereby their Bodys, which they Conſubſtantiate and Act, into particular Globules as much as they can; which may appear by Bubbles in Water, Sparks of Steel, Shot of Lead melted, Mercurial Globules, and many ſuch Inſtances. And if the Univerſal Body of the World be a Globe (as all men generaly ſuppoſe, and therefore call it *Orbis*, or the Globe) then alſo probably it is a moſt Perfect and Exact Globe; and not like the Terraqueous Globe, which by the Conſiſtence of the Earth and Heterogeneity of Earth and Water is full of Hills and Vales, Shores and Seas: but as if the Water did again cover all the Earth, and there were no Agitation therof (as it was in the *Chaos*, as I have ſhewed) it would certeinly be a moſt ſmooth *Æquor*, having a Perfectly Spherical *Superficies* of its own Body, becauſ it is Fluid; ſo much more we ought to conceiv that the Superæther, which is Higheſt, and therefore moſt Rare, and probably moſt Fluid, is moſt Perfectly Spherical, and alſo becauſ it muſt Unite together, as I ſhall ſhew heerafter. And if there be ſuch an Exact Circumference of the Utmoſt Body of the World, then there muſt alſo be as Exact a Center correſponding to that Circumference, which muſt be a Phyſical Point; for as the Phyſical Circumference muſt be in every Part therof Utmoſt, ſo the Center muſt be anſwerably Inmoſt, and therefore muſt be a ſingle Point, not Extended, nor having any Part beyond Part, becauſe any two cannot be Inmoſt or Midſt; for that muſt be ſomething that is One, whatſoever it is: and I do not intend by this Phyſical Point any ſuch leaſt Corpuſcle, as is commonly ſuppoſed, for that alſo hath Part beyond Part, but a very Point as it is in Nature, not Exiſting ſeveraly, and according to Mathematical conſyderation therof, but Coexiſting in a Body Phyſicaly, as I have before declared: and ſuch a Point is alſo the *Copula* of all Conſiſtent and Coexiſtent Extenſion, and doth Terminate both the Utmoſt *Superficies*, and this Inmoſt Center. And as it doth thus Terminate Extenſion, ſo alſo Motion of Bodys; ſo that Naturaly they Move not above the

Utmoſt

Utmoſt Circumference, or below the Inmoſt Center, as I ſhall ſhew heerafter. Now a Globe, as it is the Figure of the leaſt Corpuſcle, ſo it is Potentialy conteined in every other Figure, and as it is the Figure of the great Body of the World, doth contein in it Actualy all other Figures; Which like Extenſion, from which they flow, are not only Points, nor Lines, which have many Points, nor any Superficies having many Lines (as a Picture which hath only ſeveral Symmetrical Lineaments) but the Complete Longitude, Latitude, and Profundity of Bodys; without which there can not be the Figure of any Body which muſt be Long, Late, and Profund.

VIII. Pores are only Superficial Concavitys in the Figure of any Body: wherefore there muſt be a Body, otherwiſe there cannot be any Concavitys therof; and there muſt be ſome Concavitys, otherwiſe there ſhould be no Pores. But whether there be any other Body to fill theſe Concavitys, or not; yet the Body itſelf which is Porous is a Body, as well as the Body of the whole World is a Body, having a Superficial Convexity of itſelf, though there be none other Body without it. Or if it be filled with another Body, then that alſo which fills it is a Body, and is not the ſame Body, nor Spiritualy Homogeneous with it. Wherefore there were no Pores in the firſt Created Matter before the Intermiſtion of Heterogeneous Elements; for if the Body filling were Homogeneous with the Body that is filled, then both ſhould be Continuous, and one Intire Body without any Such Concavitys, and conſequently without any Pores. As if an empty Honycomb were all filled with Bees Wax, it ſhould no longer be a Comb, but an Intire Maſs or Cake of Wax. Alſo though Pores be Partial Diſcontinuitys of the Body Porous, yet it muſt be partly Continuous; for if the Honycomb be cut into little pieces, and they laid aſunder, the Spaces between them all are not Properly Pores of one Body, but Intervals betweeen ſeveral leſs Bodys; and ſo alſo the Interſtices of a Sive, or Silk, or the like, are no Pores, becauſ the Parts or Threads therof are only Contiguous, and not Continuous. And the Porous Body muſt be Conſiſtent, having ſuch *Vaſcula* in the Concavitys therof as may contein the Body that fills them, which muſt be Fluid: As if an Honycomb be filled

filled with Air it is Porous, but if it were filled with Tallow, or any thing equaly Consistent, it should not Properly be said to be Porous, more then any Inameld Work, or the like: much less are Fluid Bodys said to be Porous, though they have many Consistent Corpuscles in them; as Muddy Water, and the like. And though the Porous Body be generaly more Dens, becaus it must be Consistent; yet it sufficeth that it be Consistent, though it be more Rare; as an Honycomb filled with *Mercury*. And this I suppose is that which is intended by Porosity, and which I have more largely explained, becaus there is so much discours therof among Philosophers, especialy such who when they can give no better account of Nature, resort to Pores as their *Latibula* and Subterfuges: wheras, as I have said, Porosity is nothing but only particular Superficial Figure, or Concavity of the Body; whether the Pores be greater or less, *Vasa* or *Vascula*; as Cells of an Honycomb, or the least Holes in the Wax; and they do not in the least alter the Nature of the Porous Body consydered in itself: as Wax is not altered in its own Nature by being Molded into any Shape or *Effigies* whatsoever. And indeed unless we admit a Vacuity there are no Pores in Matter consydered in itself; becaus if they be filled with any other Body, whatsoever that Body is, yet being also Matter there is an Intire Continuity of both, which are one Homogeneous Body of Matter in itself. As the Terraqueous Globe is one Intire Globe, though it be partly Earth and partly Water, which are several Bodys as they are Earth and Water, but only one Body as they are Matter: for all Discontinuity, and consequently all Porosity, is from Heterogeneity; which is not of the Matter (for that is one common Substance) but from the several Spirits. And I suppose that all Fluid Bodys are also Imporous, becaus their Parts may flow together: and so some more Consistent Bodys may also be Imporous; as Glass, Gemms, Marble, and the like.

IX. I shall next consyder Density and Rarity: which, as I have said, do Immediately flow from, and Subsist in the Substance of the Matter, and not Mediately in and by Extension, like Figure, or Porosity: for the Matter itself may be more Dens, or more Rare, though the Extension be the same; not only in Extent, but also in the

very Figure, and Poroſity, as I ſhall ſhew hereafter. But as all Different Extenſion is only More, or Leſs, which are the Degrees therof; ſo is Denſity alſo More, or Leſs, becauſ all Matter hath ſome Denſity, as well as Extenſion: and More doth Comparatively Denominate a Body Denſ, and Leſs Rare; which yet are only Degrees of the ſame Poſitive Denſity; which plainly is an Affection of the Matter, and ſo Denſity, Rarity, Gravity, and Levity no Qualitys of Forms or Spirits, as hath been ſuppoſed. Wherefore as Matter is only Comparatively more or leſs Denſ, ſo all Matter is in itſelf either more or leſs Denſ within the ſame Extenſion; otherwiſe there ſhould be no ſuch Difference of the Denſity or Rarity therof: for Poroſity (which ſome as I have ſaid make to be a Subterfuge and Evaſion heerof) is altogether Impertinent to Denſity or Rarity, becauſ the Queſtion is not concerning any Complex Denſity or Rarity of Several Bodys joined together in one Complex Body; that is, both the Body Porous, and the Body filling the Pores; but of either of them ſingly and ſimply conſydered in itſelf: and certeinly either of them hath Matter, and all Matter, as I have ſaid, hath ſome Denſity, otherwiſe it ſhould not be Matter; and the only Queſtion is, whether there be any ſuch Matter which is Comparatively more Denſ or more Rare then any other Matter ſimply in itſelf? And wheras generaly Porous Bodys that are filled are more Denſ, and Bodys which fill the Pores more Rare, as I have ſhewed, it plainly appears by Poroſity itſelf, whereby they ſeek to ſolv Denſity and Rarity, that they alſo are ſuch in their ſeveral Simple Bodys ſo conſydered in themſelvs: otherwiſe becauſ a Braſs or Iron Kettle ſet upright with the Concavity therof above the Water will ſwim in Water (the Complex Extenſion both of the Veſſel and of the Air, which fills that one great Pore of the Cavity, being in the whole more Rare, and conſequently more Light, then the ſame Proportionable Extenſion of Water) we might therefore affirm that the Braſs or Iron in itſelf is not more Denſ, and conſequently more Heavy then the Water, nor the Air more Rare, and conſequently more Light then the Braſs or Iron; nor any of them more Denſ, or more Rare, and conſequently not more Heavy, or more Light, then another, ſimply conſidered in themſelvs: which if they be, as certeinly they are, then there is alſo ſuch Denſity and Rarity both of the Matter

Matter of any Porous Body, and of that which fills the Pores, ſimply conſydered in themſelvs. And indeed if we ſhould conſyder Denſity and Rarity only Complexively and not Simply, there ſhould be no Denſity and Rarity in the World (which would take away the very Subject of the Queſtion) for the whole World being one Complex Body, though it conſiſt of many particular Bodys, more Denſ, and more Rare Simply in themſelvs, yet is all Equidenſ Complexively; becauſ it is all one Complex Body. Wherefore either there is no Denſity or Rarity in the World; or if there be, the difference therof muſt be in the different Simple Bodys, and particular Matter itſelf. Alſo to inquire farther into this Poroſity, which is aſſigned to be the Formal Cauſ of Rarity; we will again conſyder the Reaſon therof: which muſt be this, that a more Porous Body is therefore more Rare becauſ the Pores are filled with more Rare Matter, unles we pleaſ to admitt a Vacuity therin (which is another Subterfuge of this Queſtion) but now we will conſyder it as filled with ſome other Matter; which if it be Equidenſ, will make the whole Complex Body Equidenſ; and therefore neceſſarily muſt be more Rare, to make the Porous Body more Rare: and then I demand, Why is that Matter more Rare which ſo fills it? and according to the ſame Reaſon it muſt likewiſe be, becauſ that Matter is a Body more Porous and the Pores therof filled with another matter more Rare, then itſelf, and ſo Infinitely; which is both Irrational, and Impoſſible: for ſuppoſe the Pores of any Terreous Body to be filled with Water, and any Pores of that with Air, and any Pores of that with Æther, and any Pores of that with Superæthereous Matter; yet we muſt at laſt ſtop ſomwhere, and confeſs, either that the laſt Matter is more Rare in itſelf, which will deſtroy the Reaſon aſſigned, or otherwiſe, that the Pores therof are not filled, but that the laſt Porous Body hath only Interſperſed Vacuitys. And ſo indeed whoſoever doth deny Denſity and Rarity of the Matter in itſelf, if he be true to his own Reaſon, muſt hold an Abſolute *Vacuum* in Nature; wherof I ſhall diſcourſ heerafter, not eſteeming this ſufficient occaſion, nor any preſent Diſcourſ therof pertinent to the Queſtion; which is, as I have ſaid, concerning the Denſity or Rarity of the Matter in itſelf, whether Porous, or not Porous, or whether the Pores therof be filled, or not filled. Now if there be ſuch a different Denſity and Rarity of the Matter itſelf,

then there may be Condenſation and Rarefaction of the Matter itſelf. And becauſ this is the greater Queſtion, and doth alſo contein the other, I ſhall ſolemnly argue it according to my maner. Certeinly there is no ſuch fixed Standard of Denſity in the Matter itſelf, and in the Nature therof, that it could not Poſſibly be more or leſs Denſ, or that God could not have Created the Matter more or leſs Denſ, becauſ there is no Contradiction in it; for it ſhould be Matter, whether more leſs Denſ; and if God might as he pleaſed have Created the whole Matter more or leſs Denſ, then he could alſo Create one part of the Matter more Denſ, and another leſs Denſ: and ſo indeed he hath; for he Created both Heaven and Earth; wherof the Heaven and Heavenly Bodys are leſs Denſ, and more Rare; and the Earth and Earthly Bodys more Denſ and leſs Rare. And if he could Create one Body more Denſ, and another more Rare, then he can alſo cauſ the Denſ Body to become more Rare, or the Rare to become more Denſ: and ſo alſo he hath; for he made the Water which is more Denſ to Aſcend in Vapors, which are more Rare; otherwiſe they could not ſo Aſcend into the Air: and again the Vapors which are more Rare, to Deſcend in Miſts and Rains, which are more Denſ, otherwiſe they could not ſo Deſcend through the Air. Alſo I prove it by the Products of Denſity and Rarity, which are Gravity and Levity, and their very Motions of Deſcent and Aſcent, according to the Hydroſtatical Rule of *Archimedes*, and all others ſince him, That more Matter of leſs Extenſion will ſink through leſs Matter of more Extenſion if it be Fluid. And this is the very Formality of Denſity that it is the Affection of more Matter being of leſs Extenſion; and of Rarity, that it is of leſs Matter being of more Extenſion. And if there be Denſity and Rarity, then alſo Condenſation and Rarefaction of Bodys: as I have ſhewed; and which may be confirmed by many Senſible Experiments, wherof I ſhall mention only two, one of Condenſation, and the other of Rarefaction. The firſt is the Impregnating of Common Water with Salt. Take a Glaſs Wine-bottle, and firſt put into it as much Salt as the Water may Imbibe, and then fill it up with Water, and ſtop it with a Cork, ſo as no Water may come forth; and being ſo ſtop'd ſtir it up and down by moving the Glaſs-Bottle until the Water be perfectly

fectly Impregnated with the Salt, and ſo made Brine; and when you let it reſt again, you ſhall find that the Brine, which now conteins both the Water & the Salt, will not fill the Bottle as before, but Subſide in the Neck almoſt to the Belly: which doth plainly ſhew a Conſyderable Condenſation, or the ſame Matter of leſs Extenſion then it was before. The other ſhall be the common Inſtance of Gunpowder fired in a Gun loaded with a Bullet; which will be violently diſcharged by the ſudden and great Rarefaction of ſo ſmall a Body of Powder into ſo large a Body of Flame, or the ſame Matter of more Extenſion then it was before, which therefore requireth a larger Place according to the inlarged Extenſion therof, and explodeth the Bullet, or breaketh the Gun, to attein it; though the Flame be a very Fluid and Corporealy Infirm Body, and hath little or no Conſiſtence in itſelf; and therefore alſo hath litle or no Poroſity in it ſelf; and if it were Porous, would rather cloſe the Pores thereof, or return again into them by ſuch a ſtrong Compreſſion, then exclude ſuch a Solid Body as the Bullet, or break the Gun. Nor is it from any Spiritual or Active Power of the Fire, which ſometimes doth not fire all the Powder; and a Windgun by Compreſſion of Air, without any Fire, doth the like Execution. Much leſs is it from any Imaginary Æthereous Matter penetrating the Gun; for unles We alſo fanſy ſome Imaginary Valvs, that Æthereous Matter would be far more eaſily forced back again, then extrude the Bullet, or ſooner break the Gun in the Entry therof then in the Retreat. Alſo Glaſs ſuddenly Heated breaks by the ſudden Expanſion; and ſo cooled, by the Contraction. By theſe, and many like Experiments, it plainly appears that there is ſuch Condenſation and Rarefaction of Matter itſelf, as I have before deſcribed; which yet ſome obſtinately deny, and either will not or cannot underſtand it through a preconceived Error that Matter and Extenſion are one and the ſame thing; which if it were true, I confeſs it impoſſible, that there ſhould be any ſuch Condenſation or Rarefaction of the ſame Matter in itſelf; for then the Extenſion alſo muſt be the ſame, and conſequently there could be no ſuch Condenſation or Rarefaction, which are Variations of the Extenſion of the ſame Matter: otherwiſe the Extenſion therof ſhould be the ſame and not the ſame, which is Contradictory. Wherefore ſuch Condenſation and Rarefaction do plainly ptove it Im-

poſſible that Matter and Extenſion ſhould be one and the ſame thing. But, as I have before ſhewed, ſo heerby it moſt evidently appeareth, that Matter is a Subſtance, and Extenſion an Accident. And though no Matter can be without ſome Actual Extenſion, yet that being an Accident Subſiſting in the Matter, there is a Potentiality therof to be ſometimes Actualy more, and ſometimes Actualy leſs, the Matter remaining the ſame. Nor is there any Penetration of ſeveral Extenſions, but only the Extenſion is thereby Varied, whether it be Inlarged, or Contracted. And ſo I do not affirm that there can be two Extenſions of one Individual Body when the ſame Matter is Contracted into itſelf by Condenſation, nor yet two ſeveral Bodys having only one Extenſion when it is Inlarged in itſelf by Rarefaction. Nor yet do I conceiv that though there be ſuch a Potentiality of more or leſs Extenſion in the ſame Matter that it is Boundleſs, or that therefore it can be Always Extended more or leſs, Infinitely (for More or Leſs as I have ſaid is Finite, and can never be made Infinite) but as in all other things, ſo in this God hath ſet certein Natural Bounds and Limits, unknown to us, which Extenſion itſelf cannot tranſgreſs. And I ſhall heer farther obſerv, that theſe Variations of Extenſion are either Condenſation and Rarefaction by Natural Generation, which do continue; becauſ they are ſo cauſed by the Spirit Superinducing them in the Matter, and ſo continuing them; as in the Accenſion of Gunpowder, and the like: or Compreſſion and Dilatation by Violent forcing of the requiſite Body of Matter and Spirit itſelf, which therefore do not continue longer then the force laſteth, that ſo conteineth the Matter in that Extenſion; as in the Windgun, and the like: and that which we call Elaſticity of the Air, wherof I ſhall diſcourſ heerafter, is only a Motion or *Niſus* to Reſtitution from ſuch Violent Compreſſion or Dilatation: and ſuch Motion may be not only of the Figure, as in bending a Bow, or the like; but of the Extenſion itſelf, as in the former Experiments. And ſo there may be a Violent Compreſſion or Dilatation of the Extenſion of a Body according to the Particular Nature therof, which yet may be a Natural Condenſation or Rarefaction according to Univerſal Nature, as when Air doth Expand itſelf *Ne detur Vacuum*, as I ſhall ſhew heerafter, and when it can Expand itſelf no farther, it will

will also there stop and not break asunder, *Ne detur Vacuum.*

X. Gravity and Levity are, as I have said, the Products of Density and Rarity, in which they Immediately Subsist, and Mediately in the Matter; as Figure doth in Extension, and by it in the Matter. Wherefore also, as Rarity is only a less Degree of Density, so is Levity of Gravity; and all Matter whether more or less Dens, yet becaus it hath necessarily some Density, it hath also some Gravity Proportionable therunto. Thus it is said, that there is *The Weight for the Wind* or Air as well as the Water, and not only Air, but also Æthereal and Superæthereal Matter hath Weight in itself either Actualy or Potentialy; for if more Matter Weigh more, becaus it is more Matter, and less Matter Weigh less, becaus it is less Matter, then all Matter must Weigh, becaus it is Matter: And thus *Pondus* is of the Matter, and *Potentia* of Spirits, as I have said: and becaus more Matter of less Extension is more Dens, therefore it is also more Grave; and becaus less Matter of more Extension is less Dens, or Rare, therefore it is also more Light: which plainly appears by Sinking or Swimming, as I have shewed. And more Grave Sinketh downward rather then Riseth upward through more Light, becaus it is more Dens, and Light more Rare: for all Matter tendeth first to Union with itself, and therefore it tends to the Center of itself, which is the Inmost Point within itself. And this Tendence we call Downward, which is indeed rather Inward. And as more Matter of the same Extension tendeth more swiftly to this Center, and therefore also is alway most forward, becaus it is more Dens, and consequently more strong in its kind, that is, more Ponderous; so for the same Reason it tendeth most strongly, and therefore passeth through more Light, which is more Rare, and consequently more Weak, unless it be also Consistent, which is from a Spiritual Quality, as I shall shew heerafter. And Globular Bodys of Matter though Equidens aud Equiponderous, yet becaus, as I have said, that Figure is most United in itself, do therefore Move faster then Angular, or any Bodys Equiponderous, but of more Superficial Figures, through the same *Medium*. And now I shall discover the wonderful Mystery of Divine Geometry in the

the Proportionable Locality of all Particular Bodys between the Center and Circumference of the Universal Body or Globe of the World: for as the Center or Inmoſt Point is the leaſt, and the Circumference or Utmoſt *Superficies* therof the largeſt; ſo all the Spheres between theſe two as they are neerer to the Center, are leſs, and larger as they are neerer to the Circumference. Wherefore it is moſt Proper, and Geometricaly Proportionable, that more Matter of a leſs Extenſion, which is more Denſ, ſhould be in a leſs Sphere, which doth beſt ſuffice to contein it; and leſs Matter of more Extenſion, which is more Rare, ſhould be in a larger Sphere which is more fitt to contein it. And thus the Globe of Earth and Water, which is moſt Denſ, is ſeated in the Inmoſt Orb of the World, which is leaſt; and the Air, which is more Rare, in a Sphere next above it, which is more large; and the Æther, which is yet more Rare, in the next above that, which is ſtill more large; and the Superæther, which is moſt Rare, in the the uppermoſt, which is largeſt. And this moſt Proper and Connatural Situation of the Terraqueous Globe, and of all the Spheres doth rightly conſtitute both the Circumference, and the Center, of the whole World, and the moſt Symmetrical *Chorus* of all the Bodys therof, as I ſhall ſhew heerafter. And certeinly as there is but one Circumference of the whole Body therof, ſo alſo but one Center; for thoſe two do mutualy Relate one to the other: as there can be but one Circumference and one Center in any one Body. Now that all this Body is Matter we all grant, and I ſuppoſe no Materialiſt will, or can deny it. Alſo it muſt be granted (as I have ſhewed of Denſity and Rarity) that Gravity or *Pondus* is the Proper Affection of the Matter, and not of Spirits, (becauſ it Subſiſts in the Denſity of the Matter) and that more Denſ and Grave Bodys Naturaly do ſink through more Rare and Light. And that Sinking is to this Univerſal Center of all the Matter, which is Loweſt, and Inmoſt, as the Circumference is Higheſt, and Utmoſt. Wherefore if any Particular Body, which is and muſt be a Part of this Univerſal Body of Matter, be more Denſ, and conſequently more Grave, it muſt Naturaly ſink through any other Bodys beneath it, which are more Rare, and conſequently more Light, toward this Univerſal Center of the whole Body of Matter, which is the Centet of the whole Body of the World,

World, and consequently of all Particular Bodys, which are only Parts therof; and no Parts of any such Particular Bodys, which are also Matter as well as their whole Bodys, can sink Inwardly to any Center of Gravity in themselvs, as to any such Particular Center: for then they should Ascend in departing from the Universal Center of Extension which is exactly *Centrum Gravium*, to which all tend. And though more Dens and Heavy Bodys may sometimes Ascend to prevent Vacuity, yet that is not as to any such Particular Center, but only to fill the Universal Globe when more Rare cannot succeed, as I shall shew heerafter: Or if they be supported by any Consistent Body, though more Rare, that is only a Fulciment, and *Tanquam* a Natural Center unto them. Wherefore as all *Pondus* is of the Matter, and Matter only one Homogeneous Body in itself, so there can be but one Center of the *Pondus* therof; though as *Potentiæ* are of the Spirits, and they are several and Hererogeneous, so there may be several Spiritual Centers therof, (which are all of another Nature, and very farr Different from this one Universal Center of Matter) and though they be Radicaly most Dens and Strong in those several Centers, yet their Motion tendeth Outward, every way, from the Center to the Circumference of their Particular Sphere of Activity, and not as the Matter Inward, or only Downward, from the Circumference to the Center of Rest: becauf Spirits are Active and Energetical, but Matter Passive and Torpid, as I have shewed. And now I shall proceed to prove this Center of the Universal Body of the Matter of the whole World, which as I have said, is also both the Center of the Extension & of the Gravity therof, to which all tend, or the Universal Center, to be in the Earth, which will also comprehend that other Question concerning the Center of the whole World. Certeinly this is the constant Language of Scripture; and so it is said, that the Waters which covered the Earth were Beneath, and the Vapors in the Air, Above: and the Royal Philosopher saith expresly, The Heaven for Hight, and the Earth for Depth: and I suppose none can shew any one Expression in the whole Bible, which may seem in the least to color or favor the contrary Opinion. And the Reason therof is as apparent (which I have before sufficiently declared) that Earth being most Dens, and consequently most Grave, and Gravity being one and the same Affection of all Matter, and having but one princi-

pal Motion, which is Direct, must therefore tend to one and the same Term, which cannot be Outward, or Upward; for then Grave Bodys should Ascend; but must necessarily be Inward, or Downward, which therefore must be to one Inmost Point or Center of that Gravity. And I shall confirm this Motion of Descent by clearing a common mistake concerning the Ascent of Rare or Light Bodys: for as all Dens and Heavy Bodys do Descend, so also do Rare Proportionably; becaus they are only less Heavy, as I have said. As if a Pound Weight be put into one Scale, and two Pounds into the other, which will caus its one Scale to Descend, and thereby the other to Ascend; yet apparently the Pound Weight is also Heavy, becaus it weighs one Pound, though the two Pounds be more Heavy, and so caus that Scale Proportionably to Descend, and the other to Ascend. Thus the Motion of Ascent of Rare Bodys is indeed rather a being Moved, and their Ascent only a Violent Elevation by more Dens and Heavy Bodys, which crowding more strongly or swiftly to or toward the Center do Elevate and Extrude the more Rare and Light from it. Also Earth only is Consistent, and cannot be prevented in the Descent therof by any other Bodys which might be Fulciments unto it, as it may be to others; and all this doth Sensibly appear by any Terreous Body Descending through Water, and through Air, and so it would also through Æther, if it were in it, not particularly as to its Proper Element, by any *Potentia* of the Elementary Spirit therof, but generaly as to the Universal Center of all Matter, by the greater Density and *Pondus* therof. For so if a Hole were made in the Earth from the Surface therof to the Center, Water would Descend thereby to it, as well as Earth, & if there were neither Earth, nor Water therin, Air would Descend likewise; and so if their were neither Earth, Water, nor Air, Æther or Superæther would Descend likewise: though some pleas to phansy otherwise, and would make all the Planetary Orbs so many Worlds of themselvs having their own Proper Centers, not respecting this Universal Center of the whole World to which all tend, but only consyder it as the Universal Center of Extension (wheras, as I have said, the Gravity or *Pondus* of the Matter is an Universal Affection of the Matter Subsisting in it, as well as Extension) which Absurdity they have Excogitated only to defend some others, which I shall also disprove heerafter. And though I might, if I pleas, believ a Traveller

ler who hath been in *Africa* concerning any Monſters therin, yet certeinly I ſhould not much believ him who had never been there himſelf. Neither can I more believ any ſuch Aſſertors concerning Æther (which being ſo Remote is commonly made *Ampliſſimus fingendi Campus*) but ſhall proceed in the known and beaten Road of Scripture, Reaſon, and Senſ, ſo far as they extend, and as we can know, or judg thereby; and leaving theſe fanſys of vain men to themſelvs ſhall heer inquire into a more ſolid and true Secret of Nature, and ſuch as deſervs a more Curious Search: which is this', That as God hath placed all the Spheres in their moſt Proper and Connatural Situations by ſuch Directive Principles in themſelvs and Symmetry of Nature, ſo in that Natural Poſition the whole Vaſt and Indefinite Body of the World, and all the Inconceivable Weight of the whole Matter therof doth ſupport itſelf thereby, withal Facility and Suavity, without any ſuſpending Funicles above, or under-propping Columns beneath, and ſo without any Force or Preſſure whatſoever. For though when any Particular Body or Part of the Univerſal Body therof is Diſlocated and removed from its Proper Station and Natural Situation therin (which is when any more Denſ Bodys are above others more Rare) they then Move or Preſs toward their Proper Place by their own Gravity and Motion of Deſcent, being thereby Actuated to reduce them therunto (as the Magnetical Virtue doth Move the Body therof being diſplaced towards the Poles of the Earth) yet when they have atteined it, their Motion, which was Actuated before for that end, being now uſeles and needles is again reduced to Potentiality, and they then neither Move nor Preſs Actualy any more, or any farther, nor have any Actual *Niſus* therunto; but having obteined their End are thenceforth in Peace and Reſt; and their very Gravity is alſo ſuſpended, and reduced to Potentiality, as the Magnetical Needle doth Reſt in the North Point: which plainly ſhews what I ſaid before, that though Gravity flow Immediately from Denſity, and Subſiſt in it, and Motion of Deſcent in the Gravity, yet they are Realy Different; becauſ though the Body continue to be the ſame, and hath the ſame Denſity Actualy both when it is out, and when it is in its Proper Place, yet when it is out, it hath Actual Gravity and Gravitation, and when it is in it, only Potential. And thus neither the Superæther doth Preſs upon the Æther, nor that upon the Air,

nor that upon the Water, nor that upon the Earth, nor the Earth upon itſelf; becauſ they are already in their Proper Places; and therefore tend no farther: for the more Denſ Bodys are Natural Fulciments and ſo farr Centers to the more Rare. And ſo the Proper Place of any Body is when being more Rare it is above more Denſ, or being more Denſ beneath more Rare, as I have ſaid; or alſo being among Equidenſ, whether above, or beneath any other parts therof, yet it is in its Proper Place; becauſ it hath ſuch a Natural Fulciment or Center ſufficient for it, and there are none more Rare beneath it, through which it may or ought to Move according to this Statike Law of Nature; but the other Equidenſ Parts whether above, or beneath it, are alſo in their Proper Sphere, which is the Proper Place of them all, and they can not otherwiſe be all in one and the ſame Point. Again I ſhall obſerv, that theſe Spheres being all Rotund, that Spherical Rotundity muſt be filled, and ſo the Sphere Completed to render it the Proper Place of thoſe Bodys wherof it is the Sphere, otherwiſe the Bodys will flow or fall every way to fill the Sphere, or any Chaſm therin; becauſ the lower parts of that Chaſm will be beneath, or neerer to the Center of the World then the others; wherefore being Equidenſ, they will all contend for one Equality or Spherical Community of Situation, which muſt Equaly relate to the Center, and Circumference of the World. Alſo heerby it appears that theſe Spherical greater Bodys do not Move to the Center, nor reſpect it in Regular *Cylinders*, as leſs particular Bodys, Plummets, or Bullets falling through the Air, which ſeem to us to Deſcend in a moſt Directly Perpendicular Line, and ſerv for Meaſures therof well enough, becauſ any ſuch requiſite Pyramidal Confirmity therof to the Center is not diſcernible by reaſon of their ſmalnes, (as ſmooth Water in a Pond ſeems to us Exactly Plane, and that *Planities* therof ſervs well enough to make a Water level) wheras any Quadrant, or Semiquadrant, or the like of thoſe Proportionable greater Bodys reſpect the Center as Pyramids Inverted with their Cones Downward, and *Baſes* Upward, which is their Exact Conformity therunto, and the way of their Gravitation and Motion of Deſcent; as we may eaſily underſtand, if we duly conſyder the Relation of any Circumference to the Center. And therefore ſuch Quadrants, and Semiquadrants, do not Superpend, nor conſequently Superincumb, in ſuch their

their Pyramidal Baſes beyond their Cones. Yet I do not conceiv of ſuch Proper Places and Spheres that they are Magical Circles, or any ſuch Phantaſtical Houſes as Aſtronomers fanſy to be in Heaven, but only, as I have ſaid, Proper Localitys of the whole Body of Matter and Extenſion of ſuch ſeveral Spherical Bodys according to the more or leſs Denſity and Gravity therof. Much leſs do I conceiv that the Center hath any ſuch Magical Virtue or Attractive Power, nor that it is any Cavity, or the like, but only a Term which is the Midſt, and Inmoſt Point, and conſequently the Loweſt of the whole Body of the Matter of the World Immovable and Inalterable, and relating to the Circumference therof, that is the Utmoſt *Superficies* of the Superæther, which is Ingenerable, Incorruptible, and Invariable, being the Univerſal Bound and Limit of Nature, and of all Bodys, and of the whole Matter and Extenſion therof. Having thus premiſed, I ſhall now examin the Preſſure of the Atmoſphere, which is ſo confidently aſſerted by ſome, though evidently there be no ſuch thing, nor can there be any Rational Suppoſition therof, without a ſuppoſed Diſlocation of the Body of the World, and offering Violence to Nature, as I ſhall now prove. God *Created the Heaven and the Earth*; and nothing beyond or without them; wherefore certeinly they Preſs upon nothing, or do not Preſs Outwardly becauſ there is no Outward thing to ſupport them, or on which rhey might Preſs; but only they tend to Union Inwardly. And as the ſeveral Spherical Bodys of the Elements do not Preſs upon the Superæther, nor one upon another Outwardly, ſo neither Inwardly, as *Job* ſaith, *He hangeth the Earth upon nothing*, that is, it doth not hang or Preſs at all either Outwardly, wherof he ſpake before, *He ſtretcheth out the North* which is the moſt Terreous part of the Globe *over the empty place*, that is, the Air (as a Veſſel is ſaid to be Comparatively empty when it is filled only with Air) nor yet Inwardly, for it hangs upon nothing beſides itſelf on which it might ſo Preſs, and it doth not Preſs upon itſelf, the whole Body and all the Parts therof being in their Proper Place, as I have ſaid. And heer again, I muſt clear one Vulgar and common Error, which may be the cauſ of the contrary Apprehenſion, that is, That the Earth, and conſequently the whole Globe of the World doth Preſs upon the Center every way, as upon a Foundation, that bears it up; or as two Bodys of equal Spiritual Strength

or *Potentia* Preſſing one againſt another with all their Power, by ſuch mutual Encounter and Reſiſtance do forcible fix and ſetle each other Immovably in ſome midle Point between them: whereas though there be ſuch particular Combats between Contrary Qualitys, and the like Opponents in Nature, and ſo there are alſo particular Diſlocations of Members in the Body therof, yet generaly the whole Structure of the Body of the World (and ſo of the Atmoſphere) is ſo Compoſed that there is no ſuch Preſſure, which Properly is not Nature but Violence, and the Deſcent of Heavy Bodys every way to the Center is only as to a Point, or Term, which they do not deſire to paſs, and therefore do not Preſs beyond it; and becauſ Violence doth not long continue, there is therefore an Innate Principle of Motion in Bodys to reduce them to their Proper Place, whereby they may obtein that Reſt which Nature Intendeth, and Abhorreth all ſuch Preſſure, Pain, or Burden. And heerin the *Pondus* of Matter and *Potentiæ* of Spirits do manifeſtly Differ; for wheras generaly the Powers of Spirits Act to the utmoſt, Inceſſantly, and without any Reſt, becauſ they are Qualitys of Active Principles (and ſo the Heavenly Bodys Move Indeſinently) the Weight of Matter which is a Paſſive Principle affecteth Reſt, and only tendeth unto it, and when and where it obteineth it, then and there it Reſteth, and the Actual Weight and Motion therof is thereby again reduced to Potentiality, as I have ſaid. And I can not conceiv any Reaſon nor frame any Notion in mine own Mind why, or how the Body of the World ſhould Preſs rather or more Inwardly then it doth Outwardly, which is not at all. And if we could ſuppoſe any ſuch Preſſure, it muſt be either every way; which would accordingly Preſs and Squeez or only downward, and then every one of the *Terricolæ* ſhould be Preſſed Downward with a Proportionable Pyramid of the whole Body of the World ſo Inverted as I have ſhewed, and according to Mathematical Rule inlarging itſelf from his Head or Back or Hand on which it doth ſo ſuperpend as the Cone, to the Utmoſt Circumference of the Superæther as the *Baſis*: for it is all Matter, and there is no Conſiſtent Body Intervening to prevent that Preſſure, and ſo if one part of that Pyramid Preſs, all muſt Preſs: and if we compute the Ineſtimable Burden therof, it will be found Inſupportable, and at the Atmoſphere alſo to be ſo Compreſt in itſelf, as would render

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it no Atmosphere, or fit place of Breathing. But let us descend farther and consyder the midle Point of the Earth and Center of the whole World; certeinly no Poet can Imagin such an *Atlas*, or *Hercules*, as might so bear the whole Burden of the whole Body of the World being farr greater then of the Heavens only, which they feigned them to bear up (though indeed the Imaginary Pressure therof be the greater Fiction.) And I appeal to the common Experience of all men, who with their own Hands can feel no such Pressure of the Atmosphere; (wheras it should Press the *Area* of the Hand Proportionably as much as 29 Inches of Mercury) and of every Diver, who can testifie the Nonpressure of the Deepest Water lying upon him: and whosoever will not accept these for Experiments, but seek to evade them I know not how, he doth plainly thereby Invalidate the Testimony of all Experiment, and render it as Sceptical as some would make both Reason and Faith, since none can be more Sensible and Notorious then this which is by feeling, the Fundamental and least Fallible Sens: But I shall plainly clear by a whole Galaxy of Experiments, which I shall therefore collect into this one Statike Rule, That in any Body Internaly Consistent in itself, or made Externaly to Consist together, the more Rare Parts therof, being duly placed above the more Dens, do not Actualy Weigh or Press the more Dens Parts below them, nor the Equidens Parts one another Perpendicularly. Whereby it shall plainly appear how a Particular Body so disposed is a Module of the Universal Body of the World in this particular respect. Thus in the highest Column of Timber, or Stone, or Colos of Bras, or Pyramid of Brick, Perpendicularly Erected, (as they ought to be) no one Part therof doth Press another, supposing them all to be Equidens, (or only so farr Proportionably as they are not so Equidens) for otherwise all must Press the very lowest and thinest Physical *Area* therof, and then let all the Incumbent Weight be computed and compared with that *Area*, and the Strength therof, and I suppose the Impossibility of such a vast Weight and Pressure, to be born by by such a slender Fulciment will easily be granted; when we see a whole Brick to be broken and battered only by a Cart-wheel going over it. Again let us consyder other Bodys sometimes Actualy Fluid, and sometimes Consistent; as a Firkin, or any larger Cask of Butter, Tallow, or the like; if it be uncased, and the

Upper

Upper and Lateral Parts of the Cask taken off from the Mass of Butter, or Tallow; yet it shall stand as firm as it did before, though there is at least an half hundred Weight Incumbent upon the *Area* therof. Wheras if you lay an Equal Plate of Lead or any more Dens Body, of the same Weight upon a thicker *Area* of the Butter, or Tallow, it will not be able to bear it, but be squeezed Outward; becaus the Equidensity and Equiconsistency of all the Parts of its own Body make them all to be at Rest, but the greater Density of the Lead doth Press them; and so if the *Cylinder* of Butter or Tallow were much higher, yet the upper Parts would not Press the neather until the Weight therof did overcome the Consistence, as the Lead doth by its Unequal Density. And if the Butter and Tallow were Melted and Fluid in the Cask, and then should be uncased, as before, they would Press and flow every way; but yet while they are conteined Externaly within the Cask, no Part therof doth Weigh or Press another. So in a Cistern of Water, while it hath no Vent, no one Part of the Water doth Weigh or Press another, nor would Oil, or the like, upon the Water, Press it. But though the Parts in these and the like Cases do not Weigh, or Press one another, yet the Whole Body whether Internaly or Externaly Consistent doth Weigh and Press the next Body beneath it, not Continuous and Consistent with it, or not Equidens. And so a Man bearing the Firkin or Cask doth feel the whole Weight therof, becaus the Parts Weigh according to the Whole; and so the Whole doth Press another Body, though the Parts of the same Body in such Cases do not Press one another. As a Pale of Water upon a Mans Head doth Weigh and Press according to the Whole, thougha Fish in the bottom of the Pale under the Water doth not feel any Weight or Pressure therof; becaus the Fish is as a Part therof, and within the Pale, which is the External Term of the Consistence therof; and the Body of the Fish Equidens, or therabout, with the Body of the Water. But if a Body Naturaly Consistent be not Erected Perpendicularly, as if a Column of Timber be held Obliquely, then the upper Parts therof do Weigh and Press Obliquely, according to the Obliquity therof; and so if any of the upper Parts do Superpend, they also do Superincumb Proportionably. As if a Pyramid Inverted (and be greater then the Pyramidal Proportion which I before mentioned) or a piece of Timber laid Transversly over

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the Top of another. Which I conceiv also to be the true Reason of the Proportionable Overweight and Advantage by Distances from the Center. But if a Fluid Body broader above then beneath, be in a Vessel of that Figure, yet the upper Parts being Equidens do not Press the lower, becaus they all Rest together upon the Consistent Vessel, and only Press upon it. Again, if the Stopcock of a Cistern, or Gutt of a Water-mill, be opened, whereby the Water hath a Vent, then the Parts above that Vent, being not supported by the Consistence, and in Motion do Press one upon another Proportionably, and issue forth with a force Proportionable therunto. And any Parts which Move do accordingly Press, though there may be a Pressure without Actual Motion by an Actual *Nisus* or Endeavour therof, As a Burden upon a Mans Shoulders doth Press upon them, though it doth not Move or Sink farther into them, and so a Weight hanging and not Moving Downward doth Press as well as when it doth Move.

XI. This is, as I conceiv, the State of the Matter, which was created One Universal Body in the Begining, Extended in itself through its whole Body, and having all its Parts beyond Parts, and so continuing Universaly in the Successive Duration therof, that as the Whole cannot be Extended more or less, so no Part therof can be Divelled and Separated from all the others, and thereby be made another several Body, or less World in itself; nor is any Part therof Annihilated, whereby it should be Diminished, nor any new Part Created, whereby It should be Augmented; but as it remains the same Universaly in the Whole Substance, so also in the Universal Affections therof, though they were first Generaly, and still may be Particularly Varied, according to the several Degrees therof which were Potentialy in itself. And yet the whole Body therof still is and must be the same, having the same Orbicular Figure, and the same Total Density and Gravity; becaus the whole Matter therof is the same, neither more, nor less, then it was, being all Bounded with the same Circumference and Center; and so as one Elementary Part is made more Dens, or Grave, another is made more Rare, or Light. And all are Bounded with the Superæther, which is Superelementary, and immutable. And as this Universal State therof can not be Varied so it hath Universal Rest in itself, which is in-

deed this Universal *Status* therof, and can not be Varied by any such Universal *Motus* which might Move the whole World. Also there is a General *Status* or Rest, which is the Station or Position of the Great and General Bodys therof, as they were first Created in the Begining, and afterward Ordered in Six Days; that is, of the Superæther, Æther, Air, Water, and Earth, which can not be Varied Generaly; though Particular Elementary Bodys are, or may be Particularly Varied, by Generation or Corruption: whereby the Extension, Figure, Density, or Gravity therof, are so Altered. And yet in these Particular Variations therof the Matter doth alway observ the Universal and General Law of itself, and of the Locality of its own Body, and of all the Parts therof, by conteining all within the same Circumference and Center; and if any Elementary Part become more, or less, Dens in itself, by Altering the Particular Station therof where it was before, and removing it to the General Station, and so if it be Violently Remov'd out of it, restoring it by a Natural Motion or *Nisus* of Restitution and Return therunto. Thus there is a double State or Rest of Matter, that is, either Universaly of Union, or Generaly of fit Station and Position therin; and as the Union is of Extension, so both the Rest and Motion to Union do, as I suppose, subsist in Extension: and as the Rest and Motion to Station is to the Center of Gravity, so they both Subsist in Density; which is also Analogous: for as Matter tends to Union with itself and hath thereby some Density in itself; so Dens, or more Matter of less Extension tends to more close Union or more Inwardly within itself. And this Union is the Foundation of the Universal Rest or Aquiescence therof in itself, which it first and most Naturaly affecteth; and of the other of Station which is next unto it, as being Convenient and Conformable to the other. And both these Rests when they are Disturbed are Recovered by that other Subservient Principle in itself, which is the Natural Motion therof. And this Motion is not Actively Contrary to Rest, as Heat to Cold; and the like Contrary Active Quality; for Rest is not Active, but rather Privative or a Not moving in respect to Motion, and only a Positive Acquiescence of the Matter itself, Subsisting in it; as also Motion doth Move unto Rest as another Assistant or Auxiliary Affection therof, and Subordinate unto Rest: (as Verticity is not Contrary, but Subordinate to Polarity, serving only to reduce Magnetike

Bodys

Bodys to that fixed Position, which is the Polar Rest therof.) Which Rest Bodys do most Naturaly affect, but being Dislocated or Disturbed, cannot attein it without Motion. And therefore Rest and Motion seem to some to be Contrary, becaus though Motion be to Rest, yet it is in itself Motion, and not Rest, and indeed it is Analogous to that which Moraly is termed *Invita Voluntas*. As when a man goeth a Journey, not willingly in respect of the Journey, and yet willingly in respect to Rest at Home: but as this Rest of Matter is Acquiescence in the Natural Union and Station therof, so Disunion or Dislocation are more Contrary therunto, which yet are not Contrary to the Rest itself, and are rather Privations of the Union and Station wherin Rest doth Acquiesce. Nor are any Different Local Motions, Upward, and Downward, and the like, Properly Contrary; but only Localy Advers, or Opposite; for they may be both from the same Principle of Motion to prevent Vacuity, and tend to the same Union of the Matter; though they may Vary the Station therof; becaus the Station, which is of Convenience, is also Subordinate to the Union, which is of Necessity. But to affirm that Bodys of Matter are in themselvs Indifferent to Motion or Rest, and so being once put into Motion would Move alway if there were no *Obex* or Impediment, is most contrary to the very Nature of Matter, which would never Move itself if it were not first Removed by others; and of Motion itself, which is only to reduce it to Rest; and to all Sens: for we feel our own Bodys (and so do all other Bodys) as they are Bodys to affect Rest, and return unto it assoon as they may: though while they are Moved by the Active Spirits they can not Rest in themselvs; but Distinctly consydered in themselvs as Bodys, they are only Passive; and so indeed Naturaly apt to be Moved by the Spirits, but not to Move themselvs; and Torpid, having no Activity in themselvs, whereby to resist the Spirits or *Potentiæ* therof, but only a Dull *Pondus* or Heavines. And that Natural Affection of Union or Station which is in themselvs is not any such Power or Strength as the Consistence of the Earth, wherof I shall discours heerafter, but only a Stupid Acquiescence in itself. And that very Motion, whereby they preserv their Union, or recover their Station, is only an Infirmity, that is an Inclination unto, and Recumbence of one Body upon another, for a mutual Support; or a Succumbence or Sinking and Falling Downward, for want

of such Support: which are all Symptoms of Weaknes, and not of any Strength. And all the Motion of Matter is only Local and not Active or Operative in itself, like the Motions of Spirits, but as an Instrument of their Spiritual Qualitys, as I have said. Nor is Local Motion strictly consydered as such in itself either the Action of the Mover, or Passion of the Moved, nor both the Action and Passion of any Automatous Mover and Moved; but the very Moving, or Transition from one Place to another. And thus, *Eo*, *Curro*, *Fugio*, *Volo*, and the like Words of Local Motion, are all of a Neutral Signification, neither Active, nor Passive. And though therupon doth ensue a Variation of the Distance of the Body Moving from or toward all other Bodys in the World, yet its own Motion consydered in itself is only a Variation of its own Locality; and that Body itself only so Moveth, and none other Body is thereby Moved besides itself, (unles it be also Impelled or Attracted by it otherwise) but Resteth in its own former Locality which it had in the great Body of the World. Otherwise when any one particular Body Moveth, all other particular Bodys in the whole World, and all Parts of Bodys which are thereby Distanced more or less from it, or toward it, or this way, or that way, according to the Motion of that one Body Moved, should likewise be Moved thereby. And so if Matter and Motion were the Natural Principles of Generation and Corruption, as some affirm, then by such Motion of any particular Body (which is a Part of the Matter) and of all the Parts and Particles therin, and consequently the Generation and Corruption therof by such Motion, all other particular Bodys, and all the Parts and Particles therof, should be conformably Moved, and consequently so Generated and Corrupted; which doth confound their own Principles. *Oportet esse memorem.* But I do acknowledg that as the Body is the Subject Matter, so also that the Local Motion of the Parts and Particles therof is very Instrumental in Generation and Corruption by Spirits, which are the Movers, Operators, and Architects therof, whereby they make fitt Seat and Officines for themselves; whereas otherwise the Body or Matter hath in itself only that Principle of Local Motion, which is to Union and Station, as I have shewed: and though Spirits may Vary the Station, yet they can never Vary the Union of Bodys, becaus they are also within the same *Ubi* of the Circumference of the Universal Body of the World, and

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the whole Extension therof, which therefore they may not break, or transgress; and they Inhabit in several Stations therof, according to the Nature of those Bodys which they require; or if they require no Body, as Angels, they may indeed pass through the whole Globe, but can not go beyond it, as I have shewed. But Rest and Motion to this Union and Station are, as I have said, Affections of the Matter Subsisting in it Mediately, but Immediately in the other Proper Affections therof; that is, Rest is the Acquiescence of Matter in that Union and Station, and Motion the Tendence of it therunto. Now from this Union or Unition is the Adhesion of Matter which is more Naturaly and Necessarily effected thereby, then by or with any Adamantine Chains or Ligaments whatsoever: for so Nature alway worketh her own Works by her own Natural and Internal Principles, and needeth no such Artificial or Mechanical Hooks and Clasps, and I know not what Intangling, rather then Uniting Figures, which some have vainly Excogitated. Wheras the very Homogeneity of the Matter Inclineth it of itself to Union with itself; and Discontinuity is only from Heterogeneous Spirits, as I have shewed, which make several Heterogeneous *Composita*, that are therefore Spiritualy Continuous only in themselvs, and Contiguous one with another; and yet even in them all, the Matter is still Continuous to and with itself, as it was before, and so continues to be one Universal Body of the whole World. Nor is this Motion to Union so Powerful in Spirits as it is in Matter, becaus it is not so Necessary in them: yet any Homogeneous *Composita* are not so easily Discontinued or Severed, as Heterogeneous; and therefore have also their Motions of Restitution; and some, as Magnets, do not only Incline, but notably attein this Unition of their Spiritual Homogeneity, wherof I shall Discours heerafter: And now will proceed farther to inquire into the Degrees of the Motion of Matter, and of the Velocity therof. I have said before, that more Matter of less Extension or any Dens Body Moves more swiftly; which is one Internal Cause of the Velocity therof: And so also the more or longer it Moves, it Moves more Swiftly; which is another Internal Cause therof: and it is not only from the External Motion of Restitution in the Air, above, or behind the Bullet, or other Body falling through it, which did Impell and Violently Dimove it, and so when the Bullet is past

through that Part of the Air, which was so Impelled and Dimoved, it returns smartly again by that Motion of Restitution behind, and upon the Bullet, which may give the Bullet some small Impulse, and so caus it to Move somewhat faster; and then the Bullet Moving faster, Impells and Dimoves the next part of the Air more forcibly, which accordingly increaseth the Motion of the Restitution therof, and so causeth the Increments of the Velocity of the Motion of the Bullet. And the Bullet in Descending also Impells and summoves that part of the Air which is beneath, and before it, and that part the next; and so prepares a way, or *Vortex*, for itself, whereby it may more easily, and consequently more swiftly, Descend. But, though it be true, that either Addition of Force, or Subtraction of Impediment, may Accelerate Motion, and heer perhaps both together do concurr, and may somewhat conduce therunto; yet I am not so Curious as others, to apprehend, either, or both of these, to be sufficient and the only Causes of so consyderable an Effect, as the notable Increas of Velocity of Motion in such Descending Bodys; but rather ascribe it to the Internal and Proper Nature of the Motion itself; which being capable of such Degrees in itself (as well as Density in which it doth Subsist) and while the Body was in Rest was only in Potentiality, and no Actual Motion, till it began to Move; and as it then begins to Actuate itself, so the longer it continues, it doth still Actuate itself more and more by Degrees in the Natural Motion therof to the Center. And there is no such Increment of Velocity in the Weight of a Clock moving *Sensim*: Nor is there any Attractive Virtue in the Center itself, as I have said, becaus that is only a Point wherin such Virtue can not Subsist, and only a Term of Locality Downward which God hath Immovably fixed and ordeined so to be, as the Circumference is Upward, and it doth no more Attract Downward then the other doth Upward. And any Equal Weight in the same *Medium*, whether it be placed in a higher, or a lower part therof, Weighs and Moves Equaly, first; and according to the continuance of the Motion, so are the Degrees of Velocity. Nor is it from the Magnetike Virtue of the Earth, for such Motions are Proportionably Equal, as I suppose throughout, and not *Per Gradum*, but *Per Saltum*, as I shall shew heerafter: and I know no Difference heerin, between a Bullet of Lead, and a Bullet of Steel, or Magnet, so Descending. And the common Observation

servation that Natural Motions are Swifter, and Violent Slower toward their End, is not generaly true of all, but only of the Matter: for the Planetary Motions are Natural, but Equal. Which Instance may well prove what I said formerly, That Spiritual Motions are for Motion and Action; but Motion of the Matter is only to Rest; and therefore Slow when the Body is first Removed from its Rest, any Remotion from which it Disaffecteth, and Swifter as it draweth neerer to the next place of Rest, which it Affecteth. Also this plainly sheweth that Motion of Descent is Realy Different from all the former Affections of the Matter, becaus it so Varieth itself, though they continue the same. Now it is also observable that according to the Increas of the Swiftnes of the Motion, so is also the Strength of Percussion: for Swiftnes is a Conspissation, or as I may so say Condensation of the Motion, and all Condensation being an Union doth fortifie. Again, as Motion is an Advantage of Percussion, so it is also of Penetration; becaus Penetration is by Percussion; and a Swifter and Stronger Percussion maketh a Swifter and Stronger Penetration: which is observable in Bows, Balists, Catapults, and the like; wherin the quick and smart Delivery maketh the great Percussion and Penetration; and Time is very consyderable heerin; for if the Percussion be so Strong and Swift, that the Body Percussed hath not requisite Time to Resist, it pierceth through it, as if it were only a *Medium*; as a Bullet shot Directly through a Bord, or Glas, maketh only a round Hole in it; wheras the same Strength, not so Swift, would make it first Bend and Cleav, or Break, which shew a Partial Resistance. And so if the Percussion be more Swift then Strong, whereby it hath not requisite Time to Penetrate, it will be more Resisted; as a Bullet shot Obliquely will Reflect from Water, or as they say Graze; as also Oister-shells (wherwith Boys use to make Ducks and Drakes as they call them) wheras in more time they would Sink into the Water. Also all Motions of Percussion or Penetration are Violent as to the Body Percussed or Penetrated, though the other may Move Naturaly, as a Bullet falling through Air, or Water, Naturaly Downward, doth Violently Percus and Penetrate the Air or Water, which is thereby Dislocated, and Violently Elevated, as I have said: and it seems to me that even that Motion of the Bullet is also as it were Violent in respect of the Place of Rest from which

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the Bullet first Moveth, which maketh it to be so Slow at first; and only Natural in respect to the next Place of Rest to which it Moveth, which maketh it so Swift at last, as I have said: but the Bullet shot is first put into Motion by the External Impression, and that Motion being wholy Violent is Swiftest at first, and Slowest at last. And yet the Motion continueth Proportionably according to the Impression, though that last no longer then the very Contact, and is Discontinued with it. Nor can I conceiv that that there is any Continuation therof, or Magical Line of Motion, between such a Mover and Moved, as some have fansied: for the Impression, being an Accident, must necessarily Subsist in its own Substance, and can not Migrate into another, nor is the *Potentia* which maketh the Impression Emanant, but Inherent. Certeinly this is a Mystery in Nature, and I know no Instance which doth more seemingly prove a Migration of Accidents, and I suppose the disproving heerof will very much confirm the contrary Truth. Now, as I have said before, the Matter having Naturaly in itself Motion is putt into it, and the Motion Actuated by any Violent Impression; as well as by Natural Tendence to Union or Station: and that which is most wonderful heerin is, that the External Impression doth not only Actuate the Motion at first, but Divert the Natural Tendence therof Downward, and Direct it another way. But as I have said, there is in Matter not only a Motion to Station which is Downward; but also to Union, which is generaly Directed by the other Downward, but may be any way; as sometimes it is Upward: and this Motion which is most Natural and Principal, is also the Universal Motion of Matter; and being Diverted, and Directed Violently, by the External Impression, doth carry the Body that way, yet so as it doth only Divert, and not destroy it, or the other Notion of Descent, which more Particylarly is to Station, and that is Particularly also Natural, whereby the Body hath still a *Nisus* and Inclination that way. And the Diversion of the Motion being Violent is, as I have also said, Strongest at first, and the Natural Weakest; and so the Violent Diversion doth overcome the Natural Motion of Descent, and Proportionably Divert it, as in Flying or Swimming; and while it doth Totaly prevail against the Motion of Descent, carrieth the Body in a Direct Line and Level any other way, though with some Decrement of the force: so that a

Bullet

Bullet ſhot out of a Gun doth not Move with an Equal Force ſo long as it flys Levell, as may appear by the Unequal Execution that it doth at a neerer or farther Diſtance within that Levell, and ſo doth Decreaſ by Proportionable Degrees: or if it be ſhott Perpendicularly Upward it will Decreaſ in Swiftnes and Strength till it return again Downward, which is the very Difference between ſuch Violent and Natural Motions heerin. And as Reſt and Motion are ſeemingly Contrary, and yet Motion is indeed Subordinate, and Subſervient to Reſt, ſo is the Natural Motion to this Violent Diverſion ſo long as it is Predominant over it. All which I ſhall manifeſtly approve by the common Experiment of a Ball Rebounding from a Paviment of Stone. Certeinly the Ball firſt falls Perpendicularly upon the Paviment by its own Natural Motion of Deſcent, which being greater then is ſufficient to carry it to its next Place of Reſt, and being ſtop'd by the Stone, is Reflected Upward, and that is a Motion Diametricaly Oppoſite to the former, and is by reaſon of that Diverſion and Direction, which it receiveth from the Paviment Externaly, and yet not by any Continued Impreſſion therof, but only from its own Natural Motion Actuated in itſelf, and ſo Diverted and Directed thereby. For the Paviment of Stone, being Conſiſtent and Quieſcent, can add nothing to it, nor make any ſuch Impreſſion upon the Ball; as an Hand may by throwing or beating it back; or a Racket by the Springines of the Strings, firſt yielding, and then Repercuſſing it; nor is there any ſuch Springines in the Ball which falleth upon the Paviment, and there is the ſame Motion of a Marble, or the like moſt Conſiſtent, and not Springy or yielding Globules. But both the Direct and Reflex Motion are from the Ball or Marble themſelvs, and the Motion therof, as the Emanation of Rays, which are Naturaly Reflexive, aſwell as Emanant. And as the Bullet, ſo alſo the Ball, or Marble, by their own Natural Motion ſo Diverted, do by Degrees prevail againſt that Violent Diverſion, and at laſt attein their Natural Reſt. And I ſuppoſe, that if an Hole were made through the Body and Center of the Earth, and a Bullet drop'd in it, the Bullet would paſs beyond the Center forward and backward, like a *Pendulum*, or Needle by its own Motion Actuated in itſelf, and ſo by Degrees return to it. Now if the Ball or Marble fall by a Diagonial Declivity, as from a Penthouſ, Roof, or Hill, or the like; then, becauſ it halt Reſt-

eth, and half Moveth, that Motion acquireth only half the Increments, or Degrees of Velocity, and may describe a Quadrant of a Proportionable Cycloid in the Descent afterward upon the Paviment; and as I suppose a *Granado* shot from a Mortarpiece Diagonialy doth from the Angle of Inclination, or *Zenith*, describe such a Quadrant between the Perpendicular and Arch of the Circle: which I leav to the Curious more Exactly to determin. And there is the like Reason of the Semicircular Vibrations of the *Pendulum:* wherof the Center of Extension is the Point where the Line hangs, and whereby the *Pendulum* is Produced to the Extremity of the Semidiametrical Plane, where the Arch therof begineth Downward, and then is let go, but cannot Descend Perpendicularly Downward, becaus the Line which is suspended at the Center doth stop it, and so Divert and Direct its own Motion of Descent accordingly to describe almost a Semicircle half about that Center, which it plainly doth, without any External Impression or Reflexion from any other Body, but only by its own Natural Motion so Diverted and Directed; and by Proportionable Decrements, as is aforesaid; (as the Needle of the Compass doth also so Move Horizontaly by a greater Motion of Verticity then is sufficient to reduce it to the Pole) and so at last the Natural Motion prevailing against the Violent Diversion, it Resteth Perpendicularly upon the *Nadir* of the Arch which it describeth, and is Correspondent to the Center of the Perpendicular Line. And probably such Decrements of Violently Diverted Motions are Proportionable to the Increments of Natural Motion. And perhaps Motions of Restitution, which are Spiritual and from the *Potentia* of Spirits, are heerin Analogous to the Natural Motion of Matter: and so a Spring of Steel beat one way seems to make one Vibration almost as much the other way; and the many Vibrations in the Torricellian Experiment are from such Causes. It may be also inquired, whether there are such Increments of the Natural Motion to Union Upward aswell as to Station Downward, as whether a Bullet which is suck'd up by a mans Breath through a longer Musket barrel doth Ascend more Swiftly and more Strongly, then if it were shorter; or *Per Saltum*, like the Motion of Magnets? for it is by the Sucking and Expanding of the Included Air thereby, which when it is so far Expanded, that the Retractive *Potentia* therof is more Præpotent then the *Pondus* of

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the Bullet, and the Air being still suck'd the Bullet doth by the other Motion of Matter to Union, as Naturaly follow it to prevent Vacuity (which I shall shew heerafter) as if it did Descend by the Motion to Station, or at least equaly as swiftly at last as at first like Æther. And I shall now observ one thing more in such Diverted Motions (which I have before intimated) that if the *Impetus* or Force therof, which is so Actuated, be greater then can be spent in carrying the Body Moved forward by reason of the Resistance of the *Medium*, or otherwise; then it not only so carry's it Directly, but the Excess therof doth also Move the Body Circularly. Thus a Bullet or Arrow discharged Violently from a Gun or Bow, besides the Direct Motion therof, Moves also Circularly. And so in a Whirlpitt which hath a Vent at the Bottom, whereby all the Parts of the Water above it are putt in Motion, as I have shewed, and yet can not all Descend and issue out together, therefore they Move Round, as also Water in a Boiling Pott: and so in the common Experiment of Water Ascending from a Basin, wherin a Flaming Candle or Charcoal kindled at one end is Perpendicularly fixed above the Water, and then an Urinal, or the like Vessel Inverted over it into the Water in the Basin, the Water will Move Round in the Basin when it begins to Ascend into the Urinal, as may appear by any Motes swimming in the *Superficies* of the Water. And so I conceiv it to be a general Rule, That if a Body in Actual Motion, so farr as it can not, according to the Actual Motion therof Move Directly, the Parts therof will Move Circularly. Now becaus all Circular Motion of the same Body, and in the same Place hath to some seemed so very Wonderful and Inexplicable; I shall heer endeavor to explain it, and grant that which is the very caus of their Wonderment, that is, that all Local Motion is, and necessarily must be, Progressive; becaus it is from Place to Place: but we must also consyder, that such a Circular Motion is Immediately of the Parts, as of the aforesaid Motes in the Water, and accordingly of all the Parts of the Water, Circularly, and consequently of the Whole, Mediately thereby: and so the Parts Move Progressively, and Successively, from their several Positions and Places in the Whole, which they have in their own Body, as well as their own Body hath in the Body of the whole World, East, West, North, and South, which is the very Nature of Place, as I shall shew heerafter:

and consequently by them the Whole Moves Circularly also in its Place, wherin it was, and still is; but only is Localy Varied or Moved according to that Variation and Motion of the Parts being itself in the whole where it was before: and certeinly all the Parts may aswell Move so Simultaneously in Time, and Successively and Orderly in Place, as the Motes; and the Motion of the Whole doth thereupon as Naturaly and Necessarily ensue: And so a Planet Moves about its own *Axis* Immediately by the Parts therof, and it Moves about the Sun Immediately by the Whole as a Part of that Circle which it describes Progressively, though in a Line Perpetualy Curv, And in such Motion of a Fluid Body any way, the Parts therof do so farr forth Weigh, Press, or Move, one another: as a Diver shall find in any *Vortex* or Stream, if he oppose himself against the Current therof, but not in any Progressive Motion of the Whole as when he swims along with it, which is a Sensible Difference. And this may help also to salv another Difficulty, which hath been esteemed Incomprehensible. How a Body Moving Circularly should Move Round in the Circumferential Parts therof in the same Space of Time as in the Centrical; since the Circumferential describe larger Circles, and Move through a greater Space or Distance of Place then the Centrical, and yet both by the same *Pondus* or *Potentia*. Wherin we must consyder that the *Pondus* or *Potentia* being Equaly applied to the whole Consistent Body Moved is distributed Equaly to all the Parts, but doth Unequaly Move them according to their Unequal Distances from the Center, whereby the Circumferential being Proportionably more Moved by their Equal share therof, according to those Distances, do Move Swifter, or through Proportionably larger Circumferences though Simultaneously in the same Space of Time, which is an Equality in Inequality; and both are Proportionable to the Nature of the Consistent Body so Moved thereby, and the Distance of the Circumferences therof from the Center. Also there is a Motion of the Whole partly Progressive, and partly Circular, As when a Coach or Cartwheel in going forward Moveth Round. And hence hath arose another Problem. How such a larger and a less Wheel being both fixed upon the same *Axis* should Move upon lower and higher Planes with Equal Circumvolutions. Which needeth no such Solution as the former, becaus it is a plain Fallacy: for in such a Position and

Motion the larger Wheel Moves Round by Perfect Circumvolutions, and the leſs Wheel partly Slides along (as well as Moves Round) ſo farr as to equal the Circumvolutions of the larger Wheel: for indeed otherwiſe it were Impoſſible that one Circumvolution of a leſs Wheel ſhould Equaly run over ſo much of the Planes, being both of the ſame Longitude, as of a larger, becauſ their Circumferences are not Equal. And this Fallacy may ſenſibly appear by not fixing, but putting both the Wheels looſ upon the ſame *Axis*; and then you may plainly perceiv the Exact Difference of the Circumvolutions Proportionably according to the Difference of the Circumferences.

XII. Local Motion, as I have ſaid, is Tranſition from Place to Place; and doth therefore import Place; which is Relative, and not only the Poſition of a Body in its own Extenſion otherwiſe then as the Parts therof are in their Reſpective Places in the Whole. And therefore no Body is ſaid to be Localy in itſelf, or in its own Whole Poſitively, but only Relatively: as we do not ſay *England* is in *England*. Wherefore alſo the whole Body of the World is not Properly in a Place, but in its own Poſition and Extenſion, which is not Properly a Place Poſitively in itſelf, but only Relatively to all the Parts therof, and without it there is no other Body, in reſpect wherof it may be ſaid to be in ſuch a Place. Nor is Place the *Superficies* of other Bodys Ambient; for not only the whole Body, but every Part within the *Superficies* of itſelf is alſo in a Place, which, as I have ſaid, it Varieth in a Circular Motion of the Whole, and yet the Whole is in the ſame Place and Vicinity of Bodys: and ſo is alſo every Point therof in a Place according to its own Proper Nature, that is, as it doth Coexiſt with others, and ſo Commove with them; ſo it is alſo Collocated with them, though not ſeverely by itſelf alone: wherefore alſo the *Superficies* of its own Body is not the Place therof, nor indeed can it be ſo many ſeveral Places: but as Extenſion hath Part beyond Part, which therefore is not one and the ſame Poſition of every one Part ſeveraly in itſelf, becauſ every one hath a ſeveral Poſition in itſelf; ſo the Place therof is the Relation of one to the other in the Whole, or as it is Beyond, farther, or neerer, heer, there, and the like; which is not only a Notional Relation, as Firſt and Laſt in Extenſion, but Real; be-

cauſ Extenſion hath Realy Part beyond Part, as well as Time hath Realy Part after Part, as I have formerly ſhewed. And ſo Circumference and Center are Real Relations of Extenſion, and there are Real Advantages of more or leſs Diſtance of any Parts from the Center, as I have ſaid. Now according to this Real Relation, a Body is ſaid to be in ſuch a Place or Part of the whole Body of the World, and not in another: And if the whole Globe of the World were a Magnet, it ſhould have a North and South Pole in reſpect of its own Parts, and ſo all the other Points of the Utmoſt, or any other Inner Circumference therof, though there be no Body beyond it to which they may ſo Point. And ſo *England* is ſaid to be in ſuch a Part of the World, and not in another; and *London* in ſuch a Part of *England*; and not in another; and ſo of any leſs Bodys, as the Parts therof are Relatively Diſtant more or leſs from the other Parts of that Body, or of the whole Body of the World, or their Situation any way Varied. Again, as there are ſuch Real Places, ſo alſo certein Real Stages and Poſts, which God hath Realy fixed in the World, as the Circumference and Center of the whole Body of the World, according to which any Part or Particular Body therof is ſaid to be Higher, or Lower; that is, more Outward or Inward, and two Poles of the Earth wherof the *Axis* doth Interſect the Center by one determinate Line ending in two certein Points, and ſo directing it, and thereby determining North and South, and conſequently all the Points of the Compaſs. And ſo there are alſo two Oppoſite Circumvolutions of Æther and Æthereous Bodys, which Denominate Eaſt, and Weſt, in all ſuch Circumvolutions, one way, or other, as I ſhall ſhew heerafter. And according to theſe Real Differences I ſuppoſe all the ſeveral Localitys and Motions of any other Bodys in the World, (which may be as Various as all Mathematical Figures) may be Determined and Denominated. Alſo becauſ all Spirits whether Material or Immaterial are within the whole Body of the World which no one of them can Poſſeſs, or fill, or be Coextended with it all; therefore they are in ſome Definite Place, or *Ubi* therof, and not in another, according to that Proper Place of the Matter which they Poſſeſs; though Matter itſelf be only in ſuch a Proper Place Circumſcriptively and Extenſively, becauſ it only hath Extenſion of itſelf; and Spirits and Spiritual Qualitys by being Localy therin do acquire ſuch a Definitive Coextenſion therwith

and

and thereby; which Coextenſion is the *Commune Vinculum* of Matter and of all Spirits, whereby ſuch are Immaterial, and do not Conſubſtantiate Matter, nor Inhere in it in *Statu Conjuncto*, as Angels, Magnetical Virtue Emanant, and the like, yet are in it and in ſome certein *Ubi* thereof (though *in Statu Separato*), aſwell as the others: and their Coextenſion is the ſame, though there be not the ſame Conſubſtantiation, or Inheſion as I have ſhewed: and the other which we call Material are indeed no more Matter, nor Material, then Angelical Spirits; but only ſo termed by way of Diſtinction from ſuch their Conſubſtantiation and Inheſion being in themſelvs truly Spirits in Bodys (as I have therefore ſo called them all by one general Name) as well as Angels out of Bodys, (as Inherent Magnetical Virtue is a Spiritual Quality, as well as Emanant) and though they be indeed Inferior and leſs Spiritual Kinds of Spirits then Immaterial in many other reſpects, and therefore ſo diſtinguiſhed, as I have ſaid; yet they are all of the ſame Univerſal Kind, or *Genus* of Spirits; and ſo as much Contradiſtinguiſhed from Matter: & therefore are no more Matter nor Material in that ſenſ one then another. Which I ſhall again and again deſire Materialiſts to conſyder, and remind; and rightly to underſtand theſe Terms of Material and Immaterial Spirits, as I have explained them, and to judg therof according to the Things themſelvs, and not of Things according to miſtaken Terms, or otherwiſe to waiv the Terms wholy, and call Matter Body, and every ſuch Form or Subſtantial Activity Spirit, whether Conjunct, or Separate; and ſo to apprehend them rightly in our Minds, as they are in their own Nature. Wheras ſome, who have not ſo cleared theſe Terms and Notions to themſelvs, either affirm all Spirits to be Matter, or that there are only Material Spirits. And I begg of every Chriſtian Philoſopher, who believeth that there are Angelical Spirits, and Spirits of Men after Death, thus Separate from the Matter, only as freely and fairly to Contemplate them in his Mind, as he doth the Matter; and Spiritual Qualitys, as he doth the Corporeal Quantity, and ſo prepare himſelf to be a fitt Judg of what I ſhall prove unto him beyond any Poſtulation; and I hope that thereby every Materialiſt may ſo Purifie and Spiritualiſe his own Immaterial Mind, which is now too farr Immerſed and Ingaged in the Matter, that he may alſo himſelf clearly diſcern Spirits and Spiritual Qualitys by his own Spiritual Light

Light beyond all my Probations: wheras ſome, becauſ they do not Diſtinguiſh between Extenſion and Coextenſion, therefore Confound Bodys and Spirits, and ſo, becauſ they do not diſtinguiſh between Extenſion and Matter, therefore Confound Subſtances and Accidents, and becauſ they do not diſtinguiſh between Extenſion and Vacuity, therefore Confound Entity and Nonentity. And though they will not allow Spirits to be in the Body of Matter, and the Coextenſion therof to be their *Ubi*, yet they can Suppoſe Matter itſelf and the very Extenſion therof to be in ſome other *Ubi*, or ſomthing which they call Space, and which muſt either be another Extenſion without a Body, or the ſame, or Nothing: though, as Poſition is only a particular Conſideration or Notion of Extenſion (as the Body or any Part therof is in its own Extenſion) ſo Space is only another Particular Conſyderation or Notion of Extenſion, as the Body or any Part therof is in ſo much of that Extenſion: and neither of them are Realy any Things in themſelvs Abſolutely, as Extenſion, or Relatively, as Place; and though theſe are ſuch particular Notions of Somthing Real, that is of Extenſion: yet Vacuity conſydered in itſelf as no Extenſion of Matter can not be ſo much as any Notion whatſoever of any thing Real: for then it ſhould be Space which Realy is the ſame with Extenſion of Matter, wherof it is only ſuch a particular Notion: Wherefore they muſt conceiv it to be another Extenſion without Matter; or, as I may ſo ſay, another Imaginary Extenſion of Extenſion, or that wherin both the Matter and alſo Extenſion therof is; and ſo we may proceed Infinitely: but all ſuch Proceſs Infinite is moſt Contrary to Finite Nature and to all Philoſophy; becauſ, as I have ſaid, it is only the vaine Reduplication in Terms of the ſame Thing in itſelf. Now if Matter and Extenſion were one and ſame, then Matter needeth none other ſuch Imaginary Extenſion, or Vacuous Space, wherin it may be Extended, becauſ it is Extended in itſelf, otherwiſe it ſhould not alſo be Extenſion: or if Matter be the Subſtance, and Extenſion the Proper and Inſeparable Accident and Affection therof, then alſo it needeth none other ſuch Imaginary Extenſion, or Vacuous Space wherin it may be Extended; becauſ it is Extended by its own Extenſion. Wherefore Vacuity is neither Matter, nor Extenſion, nor any Real Relation, nor Notion therof, nor indeed any Thing, or Entity whatſoever, but meerly Nothing or Nonentity, wherof it is only a

particu-

particular Consyderation or Notion; as Nullity or a *Cyphar* is of Number, or Nontime of Time; and the like Improper Notfinites, wherof I have formerly discourſed. Nor is it any Privative founded in Poſitives, which thereby Complexively may be Conſydered, and ſeem to be Som hing, but a particular Negative, and the very Negation of that which is the Reſpective Affirmative Being, that is, both of Matter and Extenſion: and ſo it is neither Long, nor Short; Broad, nor Narrow; High, nor Low: having no Longitude, Latitude, or Profundity; otherwiſe it ſhould be the ſame with Extenſion; which we all acknowledg, and ſhould not differ about Terms: but as conſydered ſeveraly from it, it is Nothing, and Notfinite, and ſo conſydering it I need not diſprove it, for it plainly proves itſelf not to be; being only a Negation, which is its own Denial of what any would Affirm or Imagine it to be: and ſo *Vacuum eſt Non ens*, or *Vacuum Non eſt*, or *Non eſt Vacuum*, are tantamount. Yet becauſ ſome are ſo fond of it, that not only like Lovers they feign it to be that which it is not, but I think would almoſt like Paracelſians Create it to Be by their own Imagination therof, I ſhall briefly argue againſt it. And certeinly there is no ſuch Vacuity, becauſ God himſelf never Created it, nor indeed can he; becauſ it is a Nonentity, which is not Creable, but, as I have before ſhewed, the very Negative Term from which Creation doth commence, and which doth neceſſarily Cauſ that to Be which it Creates; becauſ Being is the other Affirmative Term of Creation, which is from Not being to Being. And wheras it is commonly demanded, Whether God could not Poſſibly have Created two or more Worlds having Such a Space or Diſtance one from another, or one Part of this World having ſuch a Space or Diſtance from another? I anſwer, He might; if he did alſo Creute ſuch a Space or Diſtance (which as I have ſhewed, is Realy Extenſion) without any Body or Matter, which I ſuppoſe they who ask the Queſtion, and any Materialiſts themſelvs will not ſo eaſily grant, and they who affirm the Extenſion itſelf to be one and the ſame with the Matter, wherof it is the Extenſion, muſt by granting it, deny it, and ſo Contradict themſelvs: for then that Extenſive Space or Diſtance muſt alſo be Matter. The Philoſophers Reaſon againſt Vacuity, That then two Bodys ſhould not be together, and yet no other Body, nor conſequently any Extenſion or Extenſive Space therof, nor indeed any Thing,

which may Disterminate them, be between them; is so very true and Cogent, that I profess to dispute no farther with him who shall deny it, until he can shew me the Fallacy, or Infirmity, therof. Sensible Experiments against it are manifold; and there is such a Constellation therof in the whole Sphere of the Universal Nature, that I shall collect them all into one Statike Rule, that is, no Weight nor Power can wholy Remove any Body out of the present Place therof (though it may Rarefy or Expand it and so Exue part therof) unles another Body may Succeed: and if it do so Remove any Body, another doth Naturaly and so must Necessarily Succeed. As let Air be suck'd out of a Bladder the Sides therof will Proportionably Approach, and at last Close together; and if by an Airpump or *Expansor* the Operation should be so Strong as exceed the Consistence and Strength of the Glass, such an Exuction would also break the very Receiver. Now certeinly there is no other Cause or Reason of the Adhesion of the Air to the Bladder, or Glass (which are Heterogeneous, and therefore Discontinuous Spiritualy) but only the Continuity of Matter and Motion therof to Union, as I have said: which is to prevent Vacuity, or any Discontinuity of the Universal Matter. So in a *Siphon*, though the overweight of Water in the longer Leg be requisite, yet the Motion of Descent by the Gravity doth not otherwise Cause so great a weight of Water in the shorter Leg to Ascend then only by its own Natural Decession whereby the other doth as Naturaly Succeed, as may appear if any Air be lett in at the top of the *Siphon:* And it is not as when a Preponderous Weight or Prepotent Power at one end of a Rope draws up a less Weight tied to the other end therof: for as Air is not so fastned to the Bladder or Glass which are Heterogeneous, so neither Water to Water, though Homogeneous, becaus Water is a Fluid Body, and hath no such Consistence as will endure any such drawing, but only such a small and weak Consistence, as I shall shew heerafter. But one part therof in the *Siphon* is so United to another by this Natural and most Indissoluble Ligament of Adhesion and Union of Matter to Matter, so that for the Necessary Completion of the Universal Body therof, so great a Weight of Water doth Succeed, otherwise Water in the *Siphon* might run at any hight if the overweight were the only Cause. And Air Rarefied by Flame in a Glass, though much Lighter, Draweth up Water, which is Heavier,

vier, by being again Condensated in itself by Cold after the Extinction of the Flame or Fire, whereby it occupys a less Space; and the Water doth Succeed it, and Ascend as Naturaly to prevent the Vacuity as it doth Descend in a Whirlpitt; Yea as I have shewed this Motion to Union is most Natural and Predominant, even over Motion to Station, and no Body can Move any way in the whole Orb of Matter by any Private Motion whatsoever, unles the Universal Body therof be first Completed. And therefore the whole Body of the World is, and must be, as I have said, Orbicular; not only becaus the Superæther is most Rare, and therefore I suppose most Fluid: and all Fluidity doth Naturaly Conglobate, as I have before shewed: but though we should suppose it most Dens, and Firm or Consistent, yet it must be Perfectly Globous; becaus that is the Proper and only Perfect Figure of Union, to which this most Natural Motion to Union of the Matter must reduce it: and as it would reduce the Bladder or Glass, or any other most Consistent Bodys to Perfect Union Inwardly if the Air could be wholy Exucted, and no other Body within it; so it would also Outwardly, to a most Perfect Globular Figure, if there were no Body without it; becaus God hath Created in it a Principle of most Perfect Union which is Globular. Now as all Sens doth militate against Vacuity, so I know no Sensible Experiment which hath ever yet been offered to prove it, but such as when Vacuists themselvs have farther consydered it, they have at last found therin some Plenitude, which they did not discern at first: and I very much wonder how ever any man first fansied such a Vacuity other then as a Notion of such a particular Notfinite, or Negation of any Extension, whenas Mankind hath never yet so Imagined any of the rest, as any such Nullity in Number; or Nontime; either Coacervate, which is as if an History should thus begin, In the 6954th year before the Begining of the World: or Interspersed; which is as if we should affirm some Nontime or Nonday between Sunday and Munday, or the like. Having thus Consydered Matter as it is in itself, with the Corporeal Quantity or Extension, and other Accidents or Affections therof, whereby only we can know it, as we may Spirits by their Spiritual Qualitys; let us now so Review it simply as it is in itself, with all the Accidents or Affections therof, and severaly and distinctly from any Spirit or Spiritual Quality what-

ſoever, wherof I ſhall diſcourſ heerafter, and ſee if we can make of itſelf alone, or with all its own *Apparatus*, any ſuch Spirit or Spiritual Quality, as ſome would Produce out of it, and the Atoms or Corpuſcles therof: wheras it is in itſelf only one Univerſal Homogeneous and moſt Intire Body, which though it hath Aggregate Atoms and Corpuſcles in its own whole, Mathematicaly, yet there are indeed no ſuch Segregate Atoms or Corpuſcles therof Phyſicaly as they do Imagin, nor can any ſuch Poſſibly be without Intervening Vacuity, which we have ſufficiently diſproved. And therefore the Antient Atomiſts did alſo hold Vacuity, and ſo their Doctrine, though moſt falſ, yet was more Conſiſtent in itſelf, then the other of our Modern Corpuſcularians, who affirm Segregate Corpuſcles of Matter, and yet no Vacuity, but other Matter Intervening, which is a plain Contradiction or Matter Segregate, and not Segregate: and that Segregation therof which they pretend is only the Diſcontinuity of the Bodys of ſeveral *Compoſita* by their Individual Spirits, which are Heterogeneous, and not by the Matter, which is one Homogeneous and Continuous Body in itſelf, as I have ſaid; and even Heterogeneous *Compoſita*, which are Spiritualy Diſcontinuous, are yet Materialy as Continuous, as Homogeneous: And ſo poliſhed Metall and Marble, Drops of Water and Glaſs, Brick and Mortar, cannot be Divelled or Diſcontinued, unles Air or other Matter may Succeed to prevent Vacuity, and ſupply the Continuity of the whole Body of Matter and Extenſion therof; which is Abſolutely Neceſſary: and the Spiritual Continuity of any *Compoſitum*, which is Generable and Corruptible, is only Reſpectively Requiſite for the preſervation therof, and whereby it doth Continue its own Body, as much, and as long as it can, and defend itſelf from other Ambient Bodys, which do Beſiege and Aſſalt the Spiritual Qualitys therof, with their Heterogeneous Spiritual Qualitys; and by the Menſtruous Power therof enter and Corrupt it if they can: wheras if there be any Diſcontinuity in the Matter of the Bodily *Compoſitum*, the next Ambient Bodys, whatſoever they be, do and muſt Immediately Succeed to Complete the Great Body of Matter, which can ſuffer no Diſcontinuity, as I have ſhewed. And yet we will afford them ſuch Materials as they would have, that is, ſuppoſed Segregate Atoms or Corpuſcles, and then let them Compoſe and Confabricate them as they pleaſe into any Body, having

Longitude,

Longitude, Latitude, and Profundity; that is, Corporeal Extension; yet certeinly this will be only Matter so Extended, and no other thing whatsoever, either Æther, or Air, or Water, or Earth, or Tree, or Brute, or Man, or Angel. And this Extension of the Matter itself will only, as I have said, be Orbicular, for though all other Figures be in Extension Potentialy, yet any Variation from this most Homogeneous Figure of Union is by the Heterogeneity of Spirits, and the Plastike Virtue therof, which as the Architect or Statuary doth superinduce them, by Varying that one Universal Figure of the Matter. And yet we will also allow them, without any Spirits or Spiritual Qualitys, to Mold the Matter into what Figure they please; which will be none other then Matter so Figured and Effigiated, and only as so many Statues of Elements, Vegetatives, Sensitives, and Intelligences, but not the Things themselvs. Also though all Matter be Equidens in itself, and consequently Equigrave, and the Variations therof only superinduced in it by the Spirits, and are therefore by some termed Qualitys, yet we will allow them to Densify or Rarify, Gravitate, or Levitate, those Statues as they pleas; which will be made thereby no other then they were before; but only more Dens, or Rare, Grave, or Light. And lastly, though all Matter doth Naturaly affect Rest, and all the Natural Motion therof is only to Rest, as I have shewed, when it is at any time Violently Removed and Dislocated by Spirits or Disturbed by their Spiritual Operations; yet we will also allow them all the Motions of Matter, that is only Local Motions; and then let them either Move their whole Statues or any Parts, Corpuscles, or Atoms therof, this way, or that way, or every way, as they please; and make them as Automatous as they can suppose them to be Moved by or with any such Local Motions: yet as the whole Statues Moving Upward, or Downward, Progressively or Circularly, and the like, will only be Statues; so every one of their Parts, Corpuscles, or Atoms, so Moving therin, will be only such Parts, Corpuscles, or Atoms therof, as they were before; and so consequently the Whole also the same as it was before; only with such Variations of the Local Motion of the Matter or Parts therof, and of other Affections of the Matter, as of Gravity Levity Density and Rarity producing those Various Motions, or of Figure and Extension produced thereby, but

ſtill the Statues will be only Matter, having ſuch or ſuch Extenſion, Figure, Denſity, Rarity, Gravity, Motion, or Reſt, and the like Affections of Matter: which are Formaly in themſelvs and all together only ſuch as they are, and render the Matter only ſuch or ſuch a Statue: but can induce no Spirits and Spiritual Qualitys; Heat, Cold, Moiſture, Drines, Vegetation, Senſation, and Intellection; which, as I have ſaid, are formaly in themſelves other things farr Different from Matter, and any or all the Affections therof: and ſo I ſhall more particularly prove them to be in my following Diſcourſes: though I have already acknowledged, that as Matter is the Body of Spirits, ſo all the Affections therof are the inſtruments of Spiritual Qualitys and their Operations, and ſo as I have ſaid before (though now I have admitted it to be otherwiſe only by way of Suppoſition) they are ſuperinduced in the Matter by the Spirit, to make it a fitt Houſ and Work houſ for itſelf, and then they both dwell and Work therin; and ſo Spirits are Inſtrumental to Matter, and Matter to Spirits. But yet as when I ſee a Ship ſailing upon the Sea, and ſteering her Courſ according to the Art of Navigation, with her Sails ſpread, Tackling, and Rudder, and the reſt of her Furniture rightly Inſtructed and Gubernated, I may not therefore conceiv that ſhe can thus perform the Voiage of herſelf, and by all theſe Inſtrumentalitys, but that as ſhe was firſt thus rigged and fitted by men, ſo ſhe hath ſtill men abord who thus guide her, though I may not ſee them upon the Deck; So when I Contemplate the Active Operations of the ſeveral *Compoſita*, I know that the Rude and Common Matter could never ſo Effigiate and Diverſify itſelf, but that the Spirits did ſo Prepare it for themſelvs, and that they ſtill do Act it and Operate in it. Alſo I acknowledg, that therefore there is not only ſome Correſpondence and Analogy between all Created Nature as it is one Univerſ and Republike; but more or leſs between all the ſeveral Creatures, as I have obſerved, to be between all Quantitys: and ſo there is alſo between all the Affections of Matter among themſelvs, and likewiſe between Matter, and the Affections therof, and Spirits, and their Spiritual Qualitys, which are all conteined within the ſame Extenſion of the whole Body of Matter, and the ſeveral Figures therof are the Hieroglyphical Images of the Various Spirits, and may have ſome kind of Signature therof: and ſo Condenſation is

Analogous

Analogous to Intenſion, and Rarity to Remiſſion of Qualitys, and *Pondus* to *Potentia*, and the reſt; but eſpecialy Motion is Analogous to the very Activity of Spirits; and yet as Matter and Spirit, ſo all Material and Spiritual Accidents are Genericaly Different, and particularly Local Motion from the Active and Generative or Corruptive Motion of Elementary Spirits; and much more from Vegetation, Senſation, and Intellection, which are Motions of a farr other Nature, as I ſhall ſhew heerafter. Again, as Matter and Material Accidents are not, nor can not be Formaly the very Spirits, and Spiritual Qualitys, ſo neither are they Potentialy as others have ſuppoſed, and ſo would Educe them all out of I know not what *Potentia Materiæ*, and ſome Chriſtian Philoſophers in compliance therwith have ſuppoſed the firſt *Chaos* to be only ſuch a *Materia Prima*; though God ſaith expreſly that in the very Beginning he Created Heaven and Earth, Comprehending Superæther and all the fower Elements, as I have ſaid; and that the Matter had not only, as a *Materia Prima*, the firſt and common Affections therof, that is, one Extenſion, one Orbicular Figure, Equidenſity, and Equigravity, and the like, but particular Diverſifications, and Variations of Spheres, of ſeveral Figures, Denſitys, and Gravitys, and the like: and the Superæther then probably was Created Perfect, and adorned with all the Furniture therof, whatſoever it is: and the Elements were Created in ſuch a maner as did Denominate them Æthereal, and Aereal Heavens, Earth, and Water, (yea the very Heavens and the very Earth, as ſome have Criticaly obſerved) though Inform, and Inane, and without Motion, which is Secondary and Subordinate to Reſt, and wherof there was no Need nor Uſe before Generation and Corruption were Ordeined afterward in the Six Days. Of all which I ſhall now proceed to diſcourſ.

SECTION VI.

SECTION VI.

And the Spirit of God Moved upon the face of the Waters.

EXPLICATION.

The Spirit of God, Moving in the *Chaos*, by Supernatural Incubation did Prepare and Prediſpoſe it for the Producing and Perfecting all things, (that were before Created in it) afterward in the Six Days.

ILLUSTRATION.

1. *Of the Incubation of the Divine Spirit.* 2. *Of Actuality and Potentiality.* 3. *Of Generation and Corruption.* 4. *Of the Proceſs therof.* 5. *Of the Scale of Nature.* 6. *Of the Oeconomy therof.*

I. GOd, who in the Begining, or very firſt Inſtant, Created Heaven and Earth, could alſo have Perfected them, and all Creatures therin, in the very ſame Inſtant; as moſt probably he did ſo Perfect the Superæther, and Angelical Nature, which are the higheſt Sphere, and higheſt Nature, for the manifeſtation of his Infinite Power; yet alſo to manifeſt his Infinite Liberty and Abſolute Sovereignty over Created Being, and the Subordination and Subjection therof to himſelf; and how the Creatures, as they could not Cauſ themſelvs to Be from Notbeing, ſo alſo after they had a Being, could not of themſelvs Perfect themſelvs, nor attein any farther Degree of Welbeing without him and his Creating Cauſality, did firſt let this Elementary World ly in the *Chaos* therof, and afterward, in ſuch a Space of Time as ſeemed fitt to his Divine Wiſedom, that is, in Six ſeveral Days, proceed Gradualy and Orderly to Perfect them. And though the firſt

first Creation, which was from Absolute Notbeing to Being, must therefore have been in an Instant; becaus there is only one Affirmative Term therof, that is, Being; which must necessarily be in the same Instant assoon as it was; yet all these Works of the Six Days which were Productions from Potentiality to Actuality, or Original Generations from not such a Being to such a Being (which are several Affirmative Terms of Being, and the first only Negative of such a Being, which yet implys Being) was Gradualy in Time, according to Natural Generation, and the Process and Cours therof, which was then Instituted, as I shall shew heerafter. And this Original Generation was another Improper Creation, and Perfective of the Primitive and Proper Creation; and such as could not be performed by Nature, until the Natural Cours therof was sett in Order by the Divine Spirit: who, before it was so Produced, and until it was Perfected, did from the Begining Effectively Move, or Incubare in, or upon, the Created *Chaos*; (as it were hatching the Egg, or *Embryo*, therof) in the midst of all the Elements: that is, upon, or above, the Face of the Waters, and Earth beneath them; and under the Aereal, and Æhereal Heavens: Preparing and Predisposing them for the Production of all their *Apparatus*, and Inhabitants, out of their first Created Potentialitys Latent in the first *Chaos*, into their Actualitys in the Six Days: And all those Productions were also the Immediate Works of the same Divine Power, as it is said, *God said Let there be Light*; and so of the rest; which were not the same Creations with the first, for that had been Vain and Superfluous; nor in the same maner, for that was in the Begining, or first Instant; but these in Six several Days, Gradualy, and Orderly, according to the Natural Process of Generation which was then first Instituted, as I have said: and wherin, as all their Primitive Entitys were first Created in the *Chaos*, and then Prepared and Predisposed by the Divine Spirit; so every Production in every one of the Six Days was Previous and Preparatory in Nature to and for the Succeeding Productions, as I also shall shew heerafter. And Angels, probably being Created Perfect in and with their Superæther in the Begining (though they might be Spectators, yet neither did Operate, nor Assist, in this Improper Creation; which though Improper in respect of the former, yet is only Proper to God himself, who is expresly said so to Create in all the Six Days, as well as in the Be-

gining. But I presume rather, that as God made all things for himself, and the manifestation of his own Glory to his Intellective Creatures, Angels, and Men, so Angels were Created in the Beginning, in and with their Native Region of the Highest Heaven, that they, who can Intuitively behold all things, and needed no Created Light to Inspect the Dark *Chaos* (and so I suppose, the whole World and Frame of Nature is Transparent to them) might Contemplate all the Works of God in the Improper Creations of the Inferior Elementary World; which was to be the Region of Man, as he, who is the other Intelligence, was made last, to Review (as God himself afterward did) all the Works which he had made, and to celebrate that Sabbath of Rest which God Instituted, and as it is said, made for him. And as the Divine Spirit was the only Creator, and Angelical Spirits no Subcreators; so much less was there, or is there, any such *Archæus Faber*, or *Plastes*, *Demiurgus*, or *Demogorgon*, or I know not what Fictitious Operators, which some have substituted. And though there be, as I have said, one Universal Body of Matter, or *Corpus Mundi*; yet there is not therefore one Universal Spirit, or *Anima Mundi*, as others have fansied: for then all had been Perfected in the Beginning, both the whole Body, and Spirit of the World; and all Natural Generation and Corruption had commenced from thence, and should so have continued; and there had needed no such farther several Creations in the Six several Days, for setting in Order the several Courses therof; from which they did Originaly commence, and so have continued: Wheras though the Matter be one Homogeneous Body, yet the Spirits are many and several, and their Spiritual Qualitys Contrary one unto another, which cannot proceed from one and the same Principle; but plainly discover several Spiritual Principles therof: as I have shewed. And though they are United together in one *Compositum*, as in a Beast, or the like; yet they remain several Spirits in their own Natures, as they were before, Elementary, Vegetative, and Sensitive Spirits; and were not, nor are not, made one Universal Spirit of that one *Compositum*; much less is there any such Universal Spirit of all the several *Composita* in the whole Body of the World. And more apparently in Man, besides all these, there is also an Intellective Spirit, which is farr different from all, or any of these. So that Physicaly there is no such Universal Spirit, which is only one in Nature,

as Matter is one, whereby the whole Body and Spirit of the World ſhould be one *Individuum*, but only Metaphyſicaly, and Generically, as there is one Univerſ, and as Spirit is another Active Princ ple, or Subſtantial Activity, and ſo common to all Spirits, (though Specificaly Heterogeneous in themſelvs) wherin they all agree, and which doth Subſiſt in them all, as a Real Relation of all their Subſtances ſo agreeing and Relating, which yet are ſo Heterogeneous and ſeveral in themſelvs; but not as any Total Subſtance in itſelf, like Matter, and wherof they are all only ſo many Parts, like the Particular Bodys of Matter. Neither is there any ſuch *Potentia Materiæ* which may be the Univerſal Principle of all *Spirits*; nor are they only Diverſifications of the Matter, or of any, or all the Affections therof, as I have ſhewed. And there are Immaterial Spirits of Angels, and Men, Separate, or Separable, from the Matter (otherwiſe, then as they are in the *Ubi* of the Univerſal Body therof, which is only a Locality, or Local Circumſtance, and not the Formality of their Spiritual Nature) and ſo neither is Conſubſtantiation of the Matter the Formality of Spirits, which we therefore call Material, (as we call ſome *Animals* Corporeal) and might as well for the ſame Reaſon call their Bodys of Matter Spiritual as it is ſaid *There is a Spiritual Body*, and yet even theſe are Spirits Genericaly as well as Angels, though they are Farr Inferior to them Specificaly; becauſ Spirits are Specificaly Heterogeneous, and may thus differ; though Matter be Homogeneous, and only one and the ſame. Nor indeed is there or can there be any ſuch *Potentia*, either of Matter, or Spirits, whereby they may Produce any Subſtance; which is never Potential, but always Actual: becauſe it alway Subſiſteth in itſelf, and therefore cannot be Produced out of Potentiality into Actuality; (but only by Miſtion or Union in a Subſtantial *Compoſitum*) not like Accidents, which may be Potential; becauſ they can Subſiſt in their Subſtances, when they are not Actualy in themſelvs, nor are they like the Subſtantial *Compoſita*, which are Potentialy in their ſeveral Subſtantial Principles, wherin they Subſiſt, and Actuated by their Compoſition. And ſo in the Conſubſtantiation of Matter and Spirit, the Matter doth no more Produce the Spirit, then the Spirit doth the Matter; as alſo in Accidental Compoſition of ſeveral Accidents, one Accident doth not Produce the Eſſence of another. Thus the true *Potentia* of

the Matter is only the Power of Producing its Proper Accidents, or Affections, out of its own Substance; as Spirits also do theirs out of their own Substances: And yet though the General Accidents, or Affections; of Matter be Produced out of itself, the Particular Diversifications therof Instrumentaly are Superinduced by the Spirits, as I have shewed: whereas an Immaterial Spirit, as an Angel, Produceth his own Accidents, or Affections, not only out of his Substance but by it alone, and without any Matter; And Matter, which is otherwise more rightly said to be Receptive of all Spirits Extrinsecaly, is not therefore Productive of them Intrinsecaly. Nor indeed could both Matter and Spirits Produce either themselvs, or one another, or their own Accidents or Affections, or any Thing whatsoever, Properly without a Proper Creation, nor Improperly out of their *Chaos* of Potentiality, without an Improper Creation; nor do any Substances now Produce any Accidents, or Substantial or Accidental *Composita* Naturaly, or by Natural Generation and Corruption, otherwise then by the Successive Power and Virtue of the first Institution therof, and Divine Benediction by the Spirit of God; who so Created them, both by a Proper and Improper Creation, as I have shewed; whereby the Course of Nature, and of all Natural Generation and Corruption, doth continue accordingly. But this Original Generation, which was a Secondary and Improper Creation, did commence from the First and Proper Creation, by the Supernatural Preparation and Predisposition of the *Chaos* by the Divine Spirit: and as it was not Immediately from Nonentity, so neither from Corruption; becaus there was yet no such Generated *Compositum* which might be Corrupted; but there were only the Simple Essences of Substances and Accidents Created in the Begining in the *Chaos* of their Potentiality, and Produced into Actuality afterward, wheras Natural Generation doth alway commence from Corruption of some former *Compositum*; which if it should still remain as it was before Generated, there could not be any new Generation of another; and therefore it doth necessarily require and presuppose such a Corruption therof.

II. Thus the *Potentia* of Matter, or Spirits, is only the Power of Educing something Subsisting in themselvs, and apt to proceed and flow from them, out of Potentiality into Actuality; as I have often

often said, and shall now prove, when I have first explained my Terms. By Actuality I suppose we easily understand the Extrinsical Existence of any Essence; wherefore there must also be an Intrinsecal Essence, or Entity, wherof that is the Existence, and which without that Actual Existence doth not Actualy Exist, and when it doth so Actualy Exist, is therefore said to be in Actuality; and when it doth not, in Potentiality; becaus it is an Essence or Entity in itself whether it doth also Exist, or not Exist: which Essence, or Entity, while it doth not Actualy Exist, doth alway Subsist in some others; and therefore alway is Essentialy, though not Existentialy. And when the Essence is Produced out of that Potentiality into the Actuality, then there is a Generation therof; and when again that Actuality is Reduced into the Potentiality, then there is a Corruption therof, But Simple Substances which subsist in themselvs, therefore always are Actualy in themselvs; and are Ingenerable, and Incorruptible: Thus in the Beginning there was not only the Matter, nor only the Spirit of the Superæther, Actualy Subsisting, but also of Æther, Air, Water, and Earth; which did so Denominate those first Elementary *Composita* of the Matter and their several Spirits, the Heavens, and the Earth, as I have shewed. And so there were also in them, and with them, all the Substantial Simple Vegetative, and Sensitive Spirits, Subsisting Actualy in themselvs; though there were yet no such Mist *Composita* of the Elements themselvs as afterward which might Denominate them Stone, Metall, and the like; nor any Composition of the Elementary Spirits with the Vegetative, or of Elementary and Vegetative with Sensitive, which might so Denominate them Trees, Beasts, and the like; untill such *Composita* were Produced in the Six Days afterward. And so also there were all the Intrinsecal Created Essences, or Entitys, of Simple Accidents, aswell as Substances, which were also Created together in the Begining, in and with their Substances, though only the Universal Accidents of Matter, Extension, Orbicular Figure, Density, Rest, and the like, did then Actualy and Extrinsecaly Exist in the Matter; and there were yet none of those Particular Variations therof, which were afterward superinduced by the Spiritual Qualitys of Spirits; becaus those Spiritual Accidents did not yet Exist themselvs: and so not only Substantial *Composita*, but also such Simple Accidents were in their *Chaos* of Potentiality. As there was no Actual

Light, but Darknes; and so of the rest: but yet the Intrinsecal Essence or Entity of Light, and the Rest, was in the *Chaos* Potentialy; which is therefore termed Inform, and Inane, becaus they were not yet in it Actualy and Extrinsecaly, but were afterward so Produced in the Six Days. And all the Previous and Requisite Principles, Substantial, or Accidental, wherin any of their Produced *Composita* did Subsist Mediately, or Immediately, were first Produced themselves; without which the other could not have been Produced: as Mist Elements before Vegetative *Composita*, and Vegetatives before Sensitive *Composita*. And so doth the Natural Generation and Corruption, both Substantial, and Accidental, still continue; as doth plainly appear by all Generative Mistion and Composition, and production thereby of the *Composita*, which are so Confabricated Naturaly, aswell as Artificialy. As a Hous is Potentialy in all the Materials before it be built, and every particular Figure in the Extension of the Materials before it is framed: and when it is so Prepared and Erected it may be said to be Artificialy Generated; and when it is Demolished to be Corrupted; the Materials, like Substances, still remaining the same, and the whole *Compositum*, and every Figure therof, being first Potentialy and afterward Actualy therin; and so again Reduced from Actuality to Potentiality by Demolition: and there is no other Difference heerin between them, but only that Natural Generation and Corruption are Intrinsecal Consubstantiations or Compositions of Proper Principles of Nature, which are both the Materials and Architect therof, and Artificial Generation and Corruption are Extrinsecal; which only can be, by Application and Apposition of the Intrinsecal Principles of Nature, so applied and conjoined by the Architecture of Art. And as all these Mistions, Compositions, Figures, and Virtues, which were afterward Produced in the Six Days, were Potentialy in this first General *Chaos*; so every thing now in the Cours of any Generation, or Corruption, while it is in Potentiality, is so farr forth in the Particular *Chaos* therof; and when it is Actuated, is Produced out of it: and there is no other difference heerin between them, but that the first Production was by the Supernatural Power of the Divine Spirit, and the others by the Power of Instituted Nature, or Application of Art: so that this Potentiality is not Relative to Essence, or Entity; as if it were only a Possi-

Possibility of something, which yet hath no Essence, or Entity, in any maner whatsoever; but only to Actuality of the Essence, or Entity, therof, which is not yet in such a maner as Potentialy it may be, not only by Divine Power, which may Create it Properly, or Improperly, but according to the ordinary Court of Nature, or Art, which may so Generate it Naturaly, or Artificialy. And so the Existence itself or this Realy Different maner of Being is an Entity, Potentialy in the Essence before it Exists, and Actualy when it doth Actualy Exist. And whatsoever is not so Actualy Existent must necessarily Be before in the Essence therof Potentialy; otherwise it could never be Produced, or made Actualy to Exist by any Powers of Nature, or Art. And these Essences, or Entitys, which are yet in their *Chaos* of Potentiality, do then Actualy Exist, when, as I may so say, they come forth upon the Stage of Nature, and there Appear, and Act, or might so Appear, and would so Act, if there were no Violent Impediment; as Accidents, which are the Emissarys and Instruments of Spirits, do Exist, when they are Actualy so Emitted and Instructed, and consequently Actuated, whereby the Spirits of Sensible *Composita* do Immediately Act or Operate upon our Senses, or Sensitive Facultys; which are also Accidents, and thereby Mediately upon our Substantial Spirits: and yet there may be such a Violent Impediment whereby like Substantial Spirits which always Exist, though sometimes Latent, they may not so Appear, and Act, unto, or upon us, though they Exist Actualy in themselvs; as a Picture under a Curtain, or the like. And so there may be also an Erupturient Endeavour, which we call *Nisus*, when they can not Appear, and Act, as otherwise they might, and would, by reason of some more immediate Obstruction (like Retention by any Spontaneous Power with some Strife and Difficulty) which plainly shews them to be so far Actual; becaus there is no Actual Contention of or between any Accidents, while they are in Potentiality, though their Essential Natures be most Contrary one to another. And I conceiv that all Mistion, and Contemperature, of Contrary Qualitys, is first begun, while they are in the *Chaos* of their several Potentialitys; as they were so Prepared and Predisposed by the Divine Spirit in the Universal *Chaos*, as I have before shewed, and then there being no Actual Contrariety betwen them, they are easily Mist at first, and so by Degrees, are more and more Actu-

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aly Mist, as their Contrary Essences are more and more Actuated and Produced into Existence by a mutual Contemperation, and Gradual Process therof. Thus I have more largely explained what I intend by Actuality and Potentiality; becaus the right Understanding therof is, as I conceiv, and shall shew heerafter, the Fundamental Knowledg of the whole Doctrine of Generation and Corruption. And now I shall proceed to prove it accordingly: It is said of the first *Chaos*, that it was Inform, and and Inane, without any of those Actual Mistions, Compositions, Figures, and Virtues which were afterward Produced in the Six Days; wherof all the Essence or Entity was Created in the Begining; and which to Produce were the several Works therof: but there were all the Simple Essences and Entitys therof Potentialy in that *Chaos*, otherwise they had not been Created in the Begining, nor had it been such a *Chaos* therof, Inform, and Inane, in respect of those Essenses, which it had in itself Potentialy, and ought to have Actualy also Existent, but yet had not, and which were afterward Produced into their several Actualitys, and Existences, in the Six Days; wherin there was no Proper Creation of any new Essence or Entity (but only of the Spirit of Man as I shall shew afterward) and the Improper Creations therin were only the Productions of these Potentialitys into their Actualitys by the supernatural Power of the Divine Spirit, which was the Original Institution of Natural Generation and Corruption, as I have often inculcated, and shall now declare by a more particular Enumeration. Thus in the first Day Light was Produced out of Æther (wherin it was Potentialy before) by the Mistion therof, into Actuality; and there was no new Creation of the Essence or Entity therof: and therfore it is said, *Sit*, or *Existat Lux*; as it is also said elsewhere, *God who commanded the Light to shine out of Darknes*, or to be Produced out of the Dark Æther, like *Fumus Accensus:* and so probably Heat, and other Æthereal Qualitys, were then Produced. Also in the Second Day Vapors, which were no new Created Substances, or Essences, but only Water Rarified, did Ascend out of the Water into the Air; and the Qualitys of the Air, or *Expansum*, were Probably then Produced by the Mistion therof. And in the Third Day the Waters and Earth were Distributed, and Disposed, and Drines, Moisture, and Probably the other Qualitys therof Produced by the

the Miſtions therof. And in the Fourth Day the Sun and Moon and Starrs were made of the Æthereal Subſtance, and ſo probably all the Qualitys therof Produced. And in the Fifth Day the Water is ſaid to bring forth or Produce Fiſhes; and ſo alſo Fowls were Produced accordingly. And in the Sixth Day the Earth is ſaid to Produce Beaſts, which could not be ſo Produced in their *Compoſita*, unles they were there before in all their Simple Eſſences, or Entitys, which were all Created in the Beginirg. And in theſe Six Days there were both Compoſitions and Miſtions, or *Formæ Miſtorum*, and alſo Simple Subſtantial Spirits which were before Created in the Begining were then Produced, as is expreſsly Interpreted afterward of them all, and their Improper Creation or Making, that he *Reſted from all his Works which God Created, and made*; or Originaly, *Created to Make*, that is, Created in the Begining to Make or Perfect afterward in the Six Days. And the Apoſtle like a Divine Philoſopher doth alſo ſo Interpret it, *Through Faith we underſtand that the Worlds were framed by the Word of God; ſo that things which are ſeen were not made of things which do Appear*: that is, the *Secula* or Generations were ſo Framed and Ordered by God in the Firſt Inſtitution therof, that in all Succeſſive Generations nothing ſhould be made of any former *Phænomena*, or things which do Appear, by any Tranſpeciation or Converſion therof into other Eſſences or Entitys, but of their own Eſſences or Entitys, which he Immediately Created in the Begining, and in their firſt *Chaos* of Potentiality, wherin they then were not any ſuch Actual *Phænomena*, or Appearances, but were made to be ſuch afterward, and ſo ſtill continue to be Generated out of their Potentiality into Actuality. Which as every Chriſtian underſtandeth by Faith, according to this Divine Hiſtory of the Creation, and firſt *Chaos*; ſo alſo any Heathen, who wiſely conſydereth the ſame Courſ of Succeſſive Generation and Corruption, muſt acknowledg to be according to Natural Reaſon, and Senſ. And as the firſt Univerſal *Chaos*, ſo every Particular Succeſſive *Chaos*, is Hebraicaly called Gods Treaſury, or Storehouſ, out of which he Produceth or bringeth forth all things Generable, or Corruptible, Expending and Employing them in their Appearances and Operations, which is their Actual Uſe and Office: and ſo we read of his Treaſures of Rain, Snow, Hail, Wind, and the like. And the Author of *Eſdras* ſaith particularly of the Light, which was firſt ſo Produced: *Then*

commandedst thou a fair Light to come forth of thy Treasures, that thy Work might Appear; that is, to Exist Actualy, which before was Latent in the *Chaos* of Potentiality. And certeinly no Successive Generation in the Present Courſ of Nature can be a greater Work then thoſe Primitive Generations, which were the Immediate Works of God, and Improper Creations. Wheras if Natural Generation ſhould be any other then the Production of Created Eſſences into their Actual Exiſtences, or Corruption then ſuch Reduction therof, they ſhould be Proper Creation and Annihilation: For if any new Eſſence or Entity whatſoever, which was not before, ſhould be Cauſed to Be by Generation, then it muſt be Properly Created; and if that which was before be Cauſed Not to be by Corruption, then it muſt be Properly Annihilated. Nor doth it ſuffice to ſay, that Generation or Corruption are not of any Simple Subſtances, either Matter, or Spirits, but only of *Compoſita*, and Accidents, or Modes, or whatſoever they pleaſ to call them; for whatſoever they are, or howſoever Exile, or Deſultory their Nature may be, yet they are Real, and Entitative Somthings, not only in our Reaſon, but in Nature, as I have ſhewed: and indeed otherwiſe Generation and Corruption ſhould be no Real Alterations; but the things Generated or Corrupted ſhould be Realy the ſame as they were before; and ſo we ſhould deny all Generation and Corruption: wheras they Realy are, and do Produce Real Alterations, or ſome new thing Actualy, which was before only Pontentialy; as every *Compoſitum*, whether Subſtantial, as any Elementary Subſtance by Miſtion of the fower Elements, or Accidental, as Green by Miſtion of Blew and Yellow, and the like. Alſo this doth Senſibly appear in and by all Generations and Corruptions whatſoever: as of all Subſtantial *Compoſita*, wherof there is only ſuch a Compoſition; otherwiſe they ſhould not be *Compoſita*: and certeinly the Simple Subſtances were before Actualy Subſiſting in themſelvs, otherwiſe they ſhould not be Subſtances; and ſo likewiſe were the Simple Eſſences of Accidental *Compoſita*; as of Green, wherof certeinly the Blew and Yellow were before Actualy Exiſtent, and the Green Potentialy in both. And ſo of more Simple Accidents Produced out of their Potentiality into their Actuality: Whether of the Matter, as this or that Particular Extenſion, Figure, Denſity, and the reſt; which are Produced Actualy, yet were before

before Potentialy in Universal Extension, Figure, Density, and the rest; otherwise they could not be so Produced; nor can they be Produced into more Actualy then they were before Potentialy. Or of the Spirits; as Light, and Heat, Produced out of *Calx viva*, Thunderclowds, Haystacks, Firecanes, or any other Inflammable Bodys whatsoever, were before in the Substantial Fire therof Potentialy; otherwise they could not be so Produced; nor can they be Produced into more Actualy then they were before Potentialy. And so we commonly say of Spices, Wines, and the like; that they are Cold Actualy, but Hott Potentialy. And so Vegetatives Produce many Qualitys Actualy in Summer, which were Potentialy Latent in them in Winter: and Sensitives such in their more Adult State, which were Potentialy in them while they were Embryons. And this is the very Natural Cours of Generation and Corruption, and of all the mutual Reciprocations therof; whereby *Generatio unius est Corruptio alterius*, and *Corruptio unius est Generatio alterius*; which is the *Rota*, or Figline Wheel of Nature, turning about in the perpetual Revolutions and Conversions therof by such Production and Reduction, as I have before declared. Between which two doth always intercede Privation; as it was Antecedent in the first *Chaos*, which being Inform, and Inane, was the Universal Privation of all those Actual Existences which were afterward Produced in the Six Days; for so Existence is capable of Privation, but Essence only of Negation. But Privation is not any such Positive Principle in Generation or Corruption as Matter and Spirit, which are the Simple Substances whereby the *Compositum* is Consubstantiated, becaus it is only Privative: nor as the Essences of Accidents in their Potentiality, which are Positive Entitys; but only the very Potentiality therof; which as it Relates to Actuality, is called Potentiality, and as it Relates to Existence, Privation. Thus both Matter, and Spirit, or Form, and also Privation, are all Comprehended in the *Chaos*. And from this Dark *Chaos* of Potentiality by the Revelation of the same Divine Spirit, (which first Moved in it, and brought forth Light out of Darknes) we may discover the *Magnum Arcanum*, or Grand Secret, of Natural Generation and Corruption; and plainly perceiv how all the *Phænomena* were therin no such *Phænomena* as since they are, but first Created Potentialy, and then Produced into their Actualitys, and Appearances, Originaly in the Six Days, and

since Successively in all the *Secula* therof. Wheras all Human Philosophy, being ignorant heerof, hath groped in the Darknes of several Imaginary Notions, which the several Sects therof have Invented to themselvs, and so in stead of this *Chaos* and Creation have supposed an Eternity, and Selfsufficiency of Matter, and the *Potentia* therof, or Matter and Motion, Equivocal Generations, Transpeciations, and the like; and though *Anaxagoras* in his *Homœomeria* hath approached somwhat neerer to the Truth, yet his Conception therof is very gross and rude, and like the rest, supposeth that also to have been Eternal. And now, though I have so largely explained and fully proved this Doctrine of Natural Generation and Corruption; yet becaus I conceiv it to be so Fundamental, and therefore very requisite that we should most clearly and familiarly understand it, and discern this Divine Light; and that I may produce it out of the dark Crepuscula and Confused Notions of the antient Philosophers, who have partly acknowledged it in their Potentialitys, Eminences, and *Homœomeria*, and the like; and again obscured it with the denial of a Creation; I shall now summ up together the Effect of all I have said before. That God in the Begining Created all Essences of any Generable and Corruptible things either in their Actualitys, or Potentialitys, and all the Real Modalitys therof whatsoever whereby they were made Generable and Corruptible, and indeed every thing of them or in them that is Entitative in any kind or maner whatsoever; that is, all the Simple Substances of Matter and Spirits; Elementary, Vegetative, and Sensitive, which Subsist in themselves, in their own Actualitys, which therefore in themselvs are Ingenerable and Incorruptible. But wheras they of the same *Classis* may be Mist together, when they are so Mist, they all become one *Mistum*, which is the Thing Generated, and Realy is another Somthing Different from hem; but Actualy Subsisting in them, which therefore was before Potentialy in them; that is, in their Power to Produce it, and in its own Potentiality to be Produced out of them; and the Form therof is, that which I therefore call *Forma Misti*; as of Stones, Metalls, Mules, and the like: and if they be of several *Classes* which cannot be Mist, yet they may be Composited together; as indeed there is no Mixtion without some such Composition; for so the very Elementary *Mista* are Composited with the Matter, and Vegetatives with them,

them, and the like; and therefore the Form therof may be more rightly termed *Forma Compositi.* And as this *Forma Misti*, or *Compositi*, is thus Generable or Corruptible, becauſ it doth Subſiſt in the Simple Subſtances, and ſo may be Produced out of them wherin it was Potentialy; and then it is Generated, and in its Actuality; or Reduced again from it into its Potentiality, and ſo Corrupted: ſo alſo Simple Accidents, which clearly were Created in and with their Simple Subſtances, as Extenſion, Figure, Denſity, Reſt, and the like, in and with the Matter; becauſ they alſo Subſiſt not in themſelvs, but in their Subſtances, they may be ſo Altered and Varied by Generation and Corruption, as to be Produced out of their Potentiality into Actuality, and Reduced from their Actuality to Potentiality again: thus Heat and Cold, and the like, do ſometimes Actualy Exiſt, and ſometimes do not, but are in their Potentialitys: and ſo alſo they may be Miſt or Compoſited, as *Tepor*, and the like: and all ſuch Accidental Miſt or Compoſited Forms Subſiſt Immediately in one another, and all of them Mediately or Immediately in their Subſtances. And this is that which I intend; wherin I can not conceiv how any, who doth not deny a Creation, can differ in the Thing, but only about Terms; concerning which I muſt aſſign one Diſtinction, the want wherof I ſuppoſe hath much hindred the right underſtanding of the thing itſelf; that is, between this Potentiality, which we all mention generaly, but more ſtrictly is to be reſtrained only to things Generable and Corruptible, whoſe Simple Eſſences were before Created, as I have ſhewed, in their Potentialitys; and Poſſibility, which may be alſo of any thing Creable or Annihilable: For though Poſſibility is not nor cannot be Infinite, (becauſ there can be no other Infinite beſides God, who always Actualy is; nor Notfinite, becauſ there can be no other Notfinite beſides Nonentity, which always Actualy is not) yet it is Properly Indefinite, and as boundleſs as Infinite Omnipotence, which only can not Create another Infinite; and not ſuch an Improperly Indefinite, as the Duſt of the Earth, and the like, which I formerly mentioned. But it is to be diſtinguiſhed from Potentiality, as that which hath no maner of being in Nature, neither Actualy, nor yet Potentialy; for then it ſhould not be only Poſſible, or Creable, which is yet in Notfinite Nonentity, and only may be Cauſed to Be by Infinite Entity or Divine Omnipotence; wheras whatſo-

ever is in Natural Potentiality was Created in the Begining, and may be Produced into Actuality by the Finite Power of Natural Generation. Wherefore I conclude, that whatsoever is in Natural Potentiality is Entitative, even while it is Potential: becaus otherwise Generation and Corruption should either be Creation and Annihilation, which is Impossible; or no Real Alterations, which is most fals. But Divine Philosophy, which is only true and satisfactory, doth lead us back from the present Cours of Natural Generation and Corruption to the Original Institution therof in the Six Days, and from thence to this first *Chaos* of Potentialitys, and from thence to the Creation, and so terminates in one Infinite Creator of all things Actual or Potential.

III. Thus Generation rightly understood is and must be always Univocal; that is, not only of the same Name, but also Unigenous, or of the very same Nature. But we must distinguish between the Generation itself, which I now Intend, whereby any thing is Formaly Caused, or Intrinsecaly Generated in itself, and the Generator, or Extrinsecal Efficient Caus, which indeed may be either Equivocal, as when an Hors and Ass beget a Mule, and the like; as well as it may also be Univocal in that respect, as when Horses beget an Hors, and Asses beget an Ass, and the like: Yet in both these the Generation itself is Univocal with itself; becaus it is, as I have shewed, only the Production of something out of its Essence into its Existence, which is most Unigenous; becaus the Existence Produced is only the Existence of the Essence therof, which was Created by God with a Potentiality of Existence, and cannot be Annihilated by Generation, but is only Altered thereby, being so Produced into the Actuality of that which it was before Potentialy in itself; and so it is only its own Existence of its own Essence; then which nothing can be more Univocal, or Unigenous. But the Generator, only as an Extrinsecal Agent or Efficient, doth collect and concoct the Seed, Preparing and Predisposing it for the Generation, and then deciding and casting it forth from it self, or conteining it in itself, as some other thing besides itself, and its own Individuality, as it is said of Vegetatives, *Cujus Semen seipsum Seminet*; and so a Beast doth contein the *Fœtus* in its Womb, cherishing and fostering it as a Fowl doth an Egg Excluded; and a Fowl doth hatch Eggs by Incubation and the Heat of its own Body; as

Eggs

Eggs of Fiſhes are cheriſhed and foſtered by the Heat of the Sun in the Water, or as Seeds of Vegetatives in the Earth; which are no more more then is performed by Egyptian Ovens, or Italian Capons: but the Seeds by their own Plaſtical Virtue and Power do Effigiate, Compoſe, and Generate, themſelvs Intrinſecaly, according to their own *Species*, and Individual Nature. And thus Horſes and Aſſes Generate Mules Equivocaly, no otherwiſe then Horſes begett Horſes, and Aſſes Aſſes Univocaly, by an Extrinſecal and Inſtrumental Cauſality, which is like the Spear that wounded the pregnant Sow in the *Spectaculum*, whereby ſhe brought forth Pigs, and in ſome Generations, as of Sound, this Inſtrumentality is Neceſſary. Only Univocal Generators are more Proper, and more Natural and Efficacious, Efficients then Equivocal; and even ſome Equivocal Generators as they are more Homœogeneous are alſo more Inſtrumental then others; but always the Generation itſelf, or Production of the Eſſence into the Exiſtence of the thing Generated, is moſt Univocal; and is not, nor can not be Equivocal by Tranſpeciation, or any Tranſmutation, or Converſion of one Eſſence into another, but only of the ſame Eſſence into Exiſtence, for as it is moſt true, *Ex Nihilo Nihil fit*, by any ſuch Converſion of Nothing into Something, which is Impoſſible, as I have ſhewed; ſo, *Nihil dat quod non habet*, is alſo as true and tantamount. And yet they who Deny the one can Affirm the other, with the Addition of Fictitious Eminences, and Tranſcendent *Potentiæ*, or Creations by the Finite Power of Natural Generation inſtead of the true *Chaos*, and Creation by the Infinite Power of a Divine Creator, who is indeed the only true Eminent Cauſ. Nor do any of their Inſtances prove any ſuch Equivocal Generation in itſelf, but clearly diſprove it. So when an Horſ and Aſs beget a Mule, that Generation is as Conformable to the Miſt Seeds of both Parents, as when Horſes beget Horſes and Aſſes beget Aſſes. Only that Inſtance affordeth this farther diſcovery, that the Seed of the Female Horſ doth Contribute to the Generation, aſwell as the Seed of the Male Aſs; becauſ the Mule is of a *Species* Miſt of both. And the Burning Glaſs proves the Sun to be Actualy Hott; which yet ſome deny, and ſo from one Falſity would prove another. But their moſt common Inſtance of Converſion of Water into Air, and ſo Reciprocaly, is very fond; for the Water is not Converted into Air, but only Rarefied in itſelf, and then we call it Vapor; which

which Differs as much from Air, as Air doth from Æther or Æthereal Matter, as they term it, which I shall shew heerafter to be very Different.

IV. I shall now inquire generaly into the Maner, Method, or Proces's of Natural Generation and Corruption, and how they are performed. All Generated Substances, or Substantial *Composita*, are as I have said, Composed of Matter and Spirits. Wherefore in their Substantial Generation there must first be Matter, and a requisite Body therof, which though it may be Rarefied, or Densified, yet can not be Augmented, or Diminished, without a new Creation, or Annihilation; which is beyond the Finite Power of Natural Generation and Corruption. And as there must be such a Body of Matter, so also Spirit, and such Spirits Subordinate or Coordinate as are Requisite according to the Law of Nature, and of the particular *Compositum*. Also the Matter and the several Material Spirits must Consubstantiate one another, that is, Sensitive Vegetative and Vegetative Elementary and they the Matter being all Imperfect in themselvs, which can not otherwise be Generated; but the Human Spirit being a Perfect Substance in itself, is only Composited; Also Coordinate Spirits of the same *Classis* may be Mist together, as the Elements must always be so Mist; which appears by the Mistion of their Qualitys as in *Tepor* and the like: wheras Gravity, Heat, Plastical Virtue, and the like are not so Mist in Consubstantiation. And as in Original, so also in Successive Generation the Composition and Mistion must be such as doth Produce the requisite Accidents both of Matter, and Spirits into their Actualitys: without which their Substances cannot Act, nor Appear to us, but are unto us, as if they were not, and as in their first *Chaos*, Useles, and Ineffectual. And this is carefully to be observed by Chymists, and Physicians, and all such Operators; that there be not only requisite Matter, and Spirits, Ingredient in their Compositions; but also such a fitt Mistion Internaly, and such Instrumental Causalitys Externaly, as may Evoke and Actuate the Accidents or Affections therof, without which they will not Operate or Appear; and whereby their Operations and Appearances will be very strangely and suddenly Altered, as I have said of Wine, and Spices, which are Actualy Cold to the Touch, but Hott to the Tast; and so some may be Cold to the Tast, which will afterward become Hott by farther

farther Concoction in the Stomack, and the like. Now this Union or Local Miſtion of Matter and Spirits muſt not only be *per minima Corpuſcula*, but *per omnia Puncta*, though Maceration and Comminution are indeed Degrees therof, and Preparatory to Miſtion, and every *Compoſitum* being Macerated and Comminuted is thereby Prepared for Corruption, and ſo for a new Generation; according to that general Maxim in Nature, that Union doth fortify, and Diſunion weaken; not only Proportionably, according to the reſpective Parts, but in the Whole. And ſo the more the Maceration and Comminution is into leſs and leſs Particles, the more Preparation is there for a new Generation, which is by Perfect Miſtion, or Adunation, and not by Aggregation only; becauſ without ſuch Adunation there is no Generative Compoſition, nor indeed any Miſtion, but a Local Separation, and conſequently no *Compoſitum* Generated, either Subſtantial, (for ſo a Mule muſt be Perfectly Miſt and Compoſed of an Equine and Aſinine Subſtance, otherwiſe it ſhould conſiſt of Indefinite Equine and Aſinine Particles, which ſhould not be a Perfect Mule, but a greater Monſter then any Poetical Hippocentaur, or Hircocerv, (which is only half of one Kind, and half of another) or Accidental, as of Contrary Qualitys, Heat, and Cold, and the like, wherof there can be no Contemperature without ſuch a Miſtion; for ſuch Qualitys are not like Paſſive Affections of Matter having only Degrees in themſelvs, as Denſity, and Rarity, Gravity, and Levity, and the like, but being alſo Active in their own Nature would Naturaly Act to the utmoſt, and be moſt Intenſ in themſelvs, if they were not either Violently Obſtructed by ſome Contrarietys or Impediments, which by their *Niſus* they alſo endeavor to overcome and break through, or Contemperated by a Natural Miſtion of their Contrary Qualitys *per omnia* in and by the Primitive Generation therof out of their Potentiality into Actuality by Degrees; and which is their Natural Remiſſion. For their Temperature muſt be by a Perfect Union of both whereby neither hath any Advantage over or againſt the other, by being in the leaſt Diſunited, or having any private Sphere of Activity in itſelf, for then it fights againſt the other to the utmoſt, as Fire and Water, and the like: which if it were ſo in their Compoſition there ſhould never be any Natural and Continuing Contemperature thereby, but the moſt Tem-

perate Flesh should have only so many several Pricks, or Needles, of Intens Heat, and Intense Cold, which would be rather a double Torture, then any gratefull Temperature. And so *Lucretius* his Meadow of Flowers, though at a distance, through the Infirmity of Sight, it may represent one Confused Color, yet Sensibly hath so many several and distinct Colors: and so dry Powders of Blew and Yellow being very finely Pulverisated and Mixt together by a close Aggregation may appear Confusedly Greenish; which is only the same Infirmity of Sight, and may be rectified by a Microscope: wheras Nature is certeinly Natural, that is, most Genuine, and Real, in all her Operations, and not, as such Uncouth Opinions would render her, only External Violence, and Imposture. And as there must be such a Local Union of Spirits *per omnia Puncta* of the Body of Matter to Consubstantiate it and Appropriate it as a Particular Body for itself, which otherwise could not be so Consubstantiated *per omnia*; so the proper Union or Mistion of Spirits among themselvs though it be Coextensively *per omnia*, yet if it be not also Spiritual, that is Spiritualy Contemperated, and Coadunated, the Generation will be Imperfect, and either Momentany, or Meteorical. As if Cloth or Paper be wetted with Water, though there be a notable Imbibition therof by the Cloth or Paper, yet they are not Perfectly Impregnated, and so there is no Perfect Generation; but they seem still to remain Cloth, or Paper, and Water, severaly and distinctly in their own Natures; and not to be Mist, into one *Compositum*: and yet that Imbibition is an Inception therof, so that when they are Perfectly Separated again by Exiccation, and Evaporation, the Vapor which is a very Subtle and Intenerating *Menstruum*, as I shall shew heerafter, doth Evoke and carry away with it some of the Spirit of the Cloth, or Paper, Mist with it. But Oiled Paper seemeth to have a farther Degree of Imbibition, and is not so eatily Separable, and is like Staining with Colorate Corpuscles, Liqued that are so Imbibed, which is of a midle kind between Mingling of dry Colors and Dying in Grain. And there is a Perfect Coextension or Local Union *per omnia* of Emanant Colors, which yet is not Complete Generation, becauf their Substantial Spirits are not Localy United, though the Emanant Qualitys are Localy Mist *per omnia*; as if Rays of Light be Transmitted through a Blew and through a Yellow

a Yellow Glaſs ſo as they Interſect and are thereby Localy Miſt *per omnia*, there will be a Green Generated by that Interſection; or if you hold the two Glaſſes Partly one over the other againſt the Sun where they are Single they will appear Blew, and Yellow, and where Double a very Orient and Smaragdine Green: and yet theſe being Emanant Rays, belonging to their ſeveral Inherent Qualitys, muſt neceſſarily remain ſeveral; and only make a Local and Temporary *Compoſitum* of the ſeveral Emanant Qualitys, while they are ſo Localy United *per omnia*. And this Generation or Corruption is Inſtantaneous and without any Gradual Proceſs; for in the ſame Inſtant when the Blew and Yellow Rays are United, a Green is thus Generated thereby, and when they are Diſunited it is Corrupted: And ſo ſome more Perfect Generations, which are not only Material and Local, but Spiritual Compoſitions; as of Sounds, Magnetical Virtue, Life, and the like: but there are in ſome others Inceptions, and ſeveral Succeſſions, from the Primitive Corruption to the Ultimate and Complete Generation, which Chymiſts therefore call a Proceſs: and again generaly according to the Proceſs of Generation ſo is the Proceſs of Corruption; yet if the Extrinſecal Generator or Corrupter be more Prepotent, it may Generate or Corrupt more ſtrongly and ſuddenly and alſo more durably though ſome *Compoſita* do require more Time and will not be Generated, as ſuch, in leſs Time, or by more Prepotent Generators; as Fire doth ſtrongly and ſuddenly Generate and Corrupt generaly any Elementary *Compoſita*, being the moſt Active Element, yet ſome will not be ſo Generated by the Torrid Power therof, but in more Time by a Calefactive and Gentle Heat, in Baths, Horſdung, hott Sands, and the like. And in all Generations, which are not Momentany (as that of Emanant Colors, and the like) there are firſt Inceptions, and Embryons therof, and ſo more and more Perfect *Compoſita* by Degrees, in every Inſtant of the Proceſs therof, which if it be produced to the Perfection of the Species, is Perfect, and otherwiſe more or leſs Meteorical and Imperfect. But though Local Union only doth not make a Perfect Generation of the *Compoſitum*; which therefore is as ſuddenly Separable, as it is Miſcible, yet no perfect Generation can be without ſuch a Local Union *per omnia*, as well as Spiritual Unition, as I have ſaid: and ſuch a Generated *Compoſitum* as is by

both is not eaſily Separable, or Corruptible. And I deſire that trial may be farther made heerof, whether any Subſtances ſo Separable were ever ſo Generated and Spiritualy Impregnated *per omnia*; (as Metall Corroded or diſſolved by *Aqua fortis* which will again return into its own Body, and perhaps was only Comminuted and made more Fuſile, but never Impregnated by the *Aqua fortis*) which commonly appears by Alteration of the Denſity of the Body. But Flame which is a moſt Momentany Subſtantial *Compoſitum*, as I ſhall ſhew heerafter, is a more Perfect Production of the Actual Fire out of the Potentiality of the Fiery Vapour, and ſo ſeems continualy to be Corrupted and paſs away with every Individual part of the Fume. And I ſuppoſe Brine to be a Perfect *Compoſitum* of Water and Salt, which can not be Præcipitated, nor Percolated, or the like. And it appears plainly that they are ſo Miſt *per omnia* by the former Experiment of their Condenſation, which can not Poſſibly be only by Aggregation or Allocation. Nor can they be ſever'd by any Filtration, though never ſo Subtle and Powerfull, as may be tried by Mint, Willow, or the like ſett in a Glaſs of Brine, which will draw up both the Water and Salt together; and though by the Vegetative Power and Plaſtical Virtue therof it will afterward Excern and Expume the Salt a while, yet it will be ſoon overcome and killd by it, as Salt doth generaly kill all Vegetatives (except ſome Seaweeds which require and retein a Saltnes in themſelves) if it be too ſtrong, though a little Saltneſs, and ſuch as the Plaſtick Virtue can overcome and ſubordinate to itſelf, may excite Vegetation both in the Earth and Seeds. Thus as Matter is Conſubſtantiated with Elementary Spirits, and they one with another, ſo alſo with Vegetatives, and they with Senſitives; and ſo certeinly Vegetatives; might be Miſt one with another, as well as Senſitives are in a Mule and the like, which are more Intire and Indiviſible in themſelvs, and not ſo Miſcible as Vegetative Spirits, as I ſhall ſhew heerafter: though they are none of them Properly Indiviſible like Immaterial Spirits, becauſ they are Material and do Immediately or Meditately Conſubſtantiate the Matter, which is Diviſible. But probably none of theſe Spirits are neceſſarily Ingaged in any Particular Body or part of Matter nor Confined unto it, but only Conteined within the Univerſal Body therof, as I have

ſaid; becauſ no Matter, which is equaly Indifferent to all Spirits, and Receptive therof, is ſo mutualy Ingaged to them. Yet as Elementary Spirits do require a ſeveral Denſity or Rarity of their Bodily *Compoſita* (which they Form for themſelvs according to requiſite Degrees of Denſity and Rarity, though generaly without any Regular or Symmetrical Figures) So Vegetative Spirits have a Plaſtike Virtue whereby they do alſo Regularly and Symmetricaly Effigiate their own Bodys, and the Bodys of Senſitives whereunto they are ſubordinate, and make them more Organical, as fitt Officines, and Inſtruments for thoſe more Regular and Oeconomical Spirits (which Oeconomy is only Potential, and not Actual, untill Generation.) And then, becauſ they are alſo very Vehement and Operative Spirits, and like Culinary Fire would ſoon be Extinguiſhed, they require a conſtant Fuel and Nutriment; yet that Nutriment is not like the Fomes of Flame, which is only *Fumus Accenſus*, and ſo the Individuality of the Flame is continualy changed with the Individuality of the Fume, but a ſubordinate Nutriment of Vegetative Spirits by Elementary, and of Senſitive by Vegetative; which are ſo Subordinate one unto another, as I ſhall ſhew heerafter. And the *Compoſitum*, Vegetative, or Senſitive (which, as I have ſaid, is more Intire and Indiviſible, as it is alſo more Oeconomical) remains the ſame in its Oeconomical Individuality till it be corrupted: otherwiſe a Tree, as an Oak, or the like, ſhould be like *Theſeus* his Ship, at laſt not the ſame which it was at firſt; and ſo an old Beaſt ſhould not Remember what he did when he was young, if he ſhould not continue Individualy the ſame. But though the more Excremental Parts as Leavs, Flowers, Hairs, Nails, and the like do often decay, and are as often renewed, and the more Integral Parts leſs, as Pith, Bark, Fleſh, and the Like; and the more Noble and Conſtituent Parts leaſt, as Root Wood, the Skeleton, Veins; Arterys, Nervs, Inteſtines, and Organs; yet certainly the Individual Predominant Spirit Vegetative or Senſitive, which Denominates the *Compoſitum*, and renders it Individual, doth remain untill the Diſſolution therof. The Exceſs of Nutriment is turned into Augment of all thoſe Parts, and perhaps of the Spirit itſelf, which as it may be Miſt with other Heterogeneous Spirits, as in a Mule; ſo may alſo Unite with more of its own Homogeneous Spirit, and be Augmented thereby, untill

it attein its *Acme.* Nor is there Properly any Conſiſtent State without any Growth or Decay, as in a Square; but when the Growth ends the Decay begins, though more like the Aſcent and Deſcent of an Arch, then of an *Iſoſceles*; that is, moſt at firſt and laſt, and leaſt in the midſt. The Exceſs of Nutriment and Augment doth Generate other Individuals of the ſame *Species*, and though Generation be during Nutrition, and Nutrition during Augmentation, if the Nutriment be Copious, and the Actual Virtue of the Spirit Vigorous, which can Concoct to all thoſe Degrees, and accordingly Decide what is requiſite for thoſe ſeveral Uſes; yet if otherwiſe a Beaſt or Tree be Penuriouſly Nouriſhed, it will be Dwarfed, or very little Augmented, and Generate leſs; becauſ Nutrition is Firſt and moſt Neceſſary for the Individual *Compoſitum*, Augmentation Next and Leſs, and Generation Laſt and Leaſt. And indeed Nutrition and Augmentation, are as other Subordinate Generations, for the Preſervation and Growth of the Individual *Compoſitum*; and for the other, which is therefore more ſpecialy called Generation, becauſ it is Coordinate and Specifical, for the Propagation of another like Individual *Compoſitum*; which is by Collecting and Compoſing another Specifical Spirit and Body into the *Epitome* of the Seed, which, as I have ſaid, by its own Intrinſecal Virtue doth Intrinſecaly Generate itſelf, and ſo becomes another *Compoſitum* in itſelf, Effigiating its own Body, and Nouriſhing and Augmenting it, and afterward alſo Generating another by the Plaſtike Virtue therof, and other Internal Spiritual Powers, which God firſt Created in and with the Spirits in the Begining, and were afterward Actuated and ſett in Order by the Divine Spirit, who was the Supernatural and Univerſal *Protoplaſtes* of them all, as I have ſhewed. And ſo they ſtill continue in their Succeſſive Generations and Corruptions; wherin, though the Spirits and Spiritual Qualitys be the chief Operators and Architects, yet the Matter is the Body, and all the Accidents, and Affections therof are accordingly Inſtrumental therin: and ſo are alſo all Common Accidents; as Number, wherof the chief Inſtrumentality is Unity, which doth Fortify and reduce ſeveral Principles into one *Compoſitum* Oeconomy and Individuality. Nor indeed can I conceiv any other Power to be in Number, which is only ſo many Units; and the very Multiplication therof or Duality is rather Inſtrumental in Corruption then in Generation. Alſo Time

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is very requiſite in the Proceſs of Generation,, as I have ſhewed. And ſo likewiſe Extenſion; for no Body either Elementary, or Vegetative, or Senſitive, can poſſibly be only a Point; which can not Exiſt ſeveraly, And though every Part or Particle of Water be Water, and the like, yet Organical Bodys muſt have ſeveral Organs, or ſo many Members or leſs Corpuſcles wherof the Whole muſt be Compoſed; and that according to the *Species* therof muſt be of ſome requiſite Magnitude; for though Oaks and leſs Trees may be of ſeveral Sizes, yet none of them can be ſo ſmall as ſome Herbs, and Graſs; and ſo though there be Dogs of very Different Bignes, yet none can be ſo little as a Mite, or ſome almoſt Atomical *Animals*. Alſo Figure is very Inſtrumental heerin, as well as in Mechanical Tools, or in the Body of an Army; where the *Globus*, or Orbicular Figure, is for Safety round about, the Square *Phalanx* for Strength, the *Cuneus* or Wedg to make Impreſſions, and the like. And ſo they and others are alſo requiſite in Nature and Natural Operations, eſpecialy in Organical *Compoſita* which require Bodys fitt for ſuch Operations, of Various Figures, and moſt Symmetricaly Compoſed. And no Art of Statuary, or Painter, can ſo farr Imitate them as to endure the Criticiſm of a Microſcope. And the whole Feature and Beauty of Organical Bodys is only the Symmetrical Conformity of their Various Figures. Poroſity ſerveth for Excerning, and thereby for Preſervation of the *Compoſitum*, and alſo for Corruption by more eaſie admiſſion of any Diſſolvent or *Menſtruum*, being a Partial Comminution or Diſſolution of the Body in itſelf, as Perfect Continuity doth fortify. And therefore alſo Denſity doth Preſerv, not only in Proportion to the Parts, but in the Whole, as it is more United in itſelf and in all the Parts therof: and hath Proportionably more of the Spirit, and more United. And as Maceration doth weaken, ſo alſo Rarefaction. And every Specifical Spirit doth require a Body of a Proper Denſity or Rarity, wherof there are Innumerable Degrees, and it can hardly be ſuppoſed that any two Bodys of Spirits Specificaly Different are of the ſame Degree of Denſity exactly, but either more or leſs. And as the *Compoſitum* is Varied by a new Predominating Spirit, ſo the Denſity or Rarity of the Body therof is Varied likewiſe: as may appear by Impregnating, and Superimpregnating, and the like. And ſo likewiſe Gravity and Levity and the Motion therof to Station, but eſpecialy the Principal Motion

tion to Union or Contact, are very Inſtrumental in Generation and Corruption, as appears by the Local Union of Emanant Rays. Yet Matter and all theſe Various Affections therof are no Formal Cauſalitys of Spirits, or Spiritual Qualitys, or of the whole *Compoſita* Conſubſtantiated and fitted thereby, as I have ſhewed. But when the *Compoſitum* is thus Compoſed Materialy and Spiritualy, and Inveſted and Inſtructed with all the requiſite Accidents, both of the Matter, and Spirits, then is the Generation therof Perfected, and then it doth Appear and Operate, being thus Produced out of Potentiality into Actuality with all the Furniture therof, and ſo continues Naturaly untill it be again Corrupted. And ſo were the Original *Compoſita* Produced by the Divine Spirit in the Six Days, and have ever ſince, and ſtill do continue according to that Inſtituted Courſ of Nature; From which when God himſelf doth Vary, it is Miraculous, and when Nature doth Aberr, it is Monſtrous: and yet even thoſe particular Monſtroſitys are generaly Comprehended within this Univerſal Law of Generation and Corruption; as all Equivocal Productions, and the like; being otherwiſe generaly Conformable therunto, as I have ſhewed. And as Nature doth only work by thoſe Ingenerable and Incorruptible Principles, Powers, and Virtues, which God firſt Created in the Begining, and then ſett in Order in the Six Days; ſo Art can only work by Application of theſe Natural Principles, Powers, and Virtues, which is alſo Monſtrous and Diſorderly in reſpect of the Conſtant Courſ of Nature that was Produced in the Six Days, though it be according to the Nature of Intellectives, and Senſitives, being External Operators, ſo Ingeniouſly and Artificialy to Apply them, by their Natural Wit and Art, which is ſomthing more Divine, and more like to the Operation of the Divine Spirit, even thus by Diſordering to Order and Improve Nature for their own Uſe and Service. But neither Nature, nor Art, can work Miracles, much leſs Create, or Annihilate, any thing. Nor hath God himſelf ever ſince Created any new thing Generable and Corruptible, nor ever wrought any ſuch Miracles, or added any thing to the *Chaos*, or Elementary World, which he firſt Created in the Begining, and Made in the Six Days, as I have ſhewed, and then Reſted from all that Work of ſuch Improper Creation. Nor probably will he ever Annihilate any thing therof, more then of Superæther, or the Intelligences; though the firſt *Chaos* may afterward

ward become an everlasting *Gehenna*, and many present Actualitys be for ever Reduced into Potentiality. However the Created Essences shall remain Eternaly for the Eternal manifestation of the same Divine Glory: as the Wise man hath said, *I know that whatsoever God doth shall be for ever; Nothing can be putt unto it, nor any thing taken from it.*

V. Now as the Divine Spirit did thus Prepare and Predispose the *Chaos*, and out of it Produce the whole Frame and Court of Natural Generation and Corruption, so I shall from the Review therof Deduce the whole Scale and Order of all Generable and Corruptible Natures. Wherof Matter is the Lowest, which is the Common Body of all such Spirits as do Consubstantiate it, Immediately, or Mediately, and Mansion of others which do only Inhabit it. And no Matter can be without some Spirit Consubstantiating it, being only an Imperfect Substance in itself, and therefore in the Begining had a Superæthereal Spirit to Consubstantiate the Superæthereal Body of Matter, whence it is Denominated Heaven, as well as Æther and Air, and therefore also Superæther, though it be not Elementary yet is of the same *Classis*, becaus it doth Immediately Consubstantiate the Matter, as well as Elementary. But though the Matter can not be without some Material Spirit so Consubstantiating it, yet, as I said, they are not Ingaged to any particular Matter but may Remove from one part of Matter to another, as Matter may from one Place to another in the Universal Body therof; and clearly Immaterial Spirits, which do not Consubstantiate the Matter, need no Consubstantiation by it, and may be in this or that Extension of the Matter, but can not pass beyond it into any Imaginary Inanity, or Nonentity; becaus they also are Entitys; and within one and the same Universal Province and Law therof. Much less can any Matter wander beyond the Utmost Limits of itself which is the Circumferential *Superficies* of the Highest Orb therof, beyond which it can not Ascend, as it can not Descend below the Center. Wherefore that Fansy of *Lucretius* is very Futile and Vain, that if an Arrow were shott forth beyond that Circumference it would fly forward Perpetualy; for then it must always Ascend from the Center of the World, and never attein any other Center of Rest; which is most contrary to the Law of Motion to Station; and also might Exist, Localy beyond the Univer-

ſal Extenſion of the whole Body of the World, and be another leſs World or Univerſ in itſelf, which is moſt contrary to the Law of Motion to Union; whereby, as I have ſaid, the whole Body of Matter is Naturaly Conſtituted ſuch an Orbicular Body, by ſuch a Perfect Circumference and Center, and is not Protuberant in any Part of itſelf or other then a moſt exact Globe, becauſ that is the moſt United Figure, wherunto the moſt Univerſal Law of Union doth Oblige the whole Matter therof: and even Spirits themſelvs do Exiſt only within the Univerſal Coextenſion and Locality; becauſ beyond it there is no Place, or *Ubi*, or Entity, wherin they may Poſſibly Exiſt; for as they have no Extenſion of themſelvs, ſo alſo no Place, or *Ubi*, whatſoever, but only in the Extenſion and Body of Matter, wherof, and wherin, they are Such Active and Operative Subſtances and Spirits. The next in this Scale of Nature are the fower Elements; Æther, Air, Water, and Earth; which none can deny to be, and I ſhall now prove them to be Elements, when I have firſt explained the Term, which will plainly Elucidate the Thing: and I ſhall do it Exemplarily by Matter itſelf, which is indeed the moſt Common Element, or Præelement therof, and Immediately Conſubſtantiated by them, and the Superætheral Spirit: and ſo Matter is their firſt Body, or Element, which is the true Notion of an Element; and ſo I intend it to be a Natural *Subſtratum* of ſome other Superior and more Active Subſtance, and which may be ſo Compoſited or United with it, as a Body with a Spirit but not that the Spirit is Produced out of any *Potentia*, or Equivocal Cauſality therof, which I have already ſufficiently refuted; or that it is Generated thereby more then the Body is Generated by the Spirit; but that both are Compoſited or United Naturaly together into one *Compoſitum*, which is the very Generation therof. And theſe fower Elements are commonly ſo called in reſpect of the Superior Spirits, wherof they, with the Matter, become a Second Matter, or Prepared Body therof, as the Matter was of them, for they only, and the Superæthereal Spirit, can Immediately Inform the Matter, and the Superior Spirits only Mediately by them, and ſo one by another, according to their *Claſſes* and Ranks in the Scale of Nature, as I ſhall now ſhew. And though any one Elementary Spirit might Conſubſtantiate the Matter in the firſt *Chaos*, as well as the Superæthereal Spirit, yet until they were all Prepared and Prediſpoſed by the Divine Spirit, and fitly

ficly Mist together in the Three first Days, no Vegetative or other Superior Spirit could be Produced, or Inform any one of them alone, and also the Matter; becaus not any one of them alone together with the Matter is a fitt Body of the Superior Spirits, more then the Superæther, which is Superelementary, and no such Elementary Body of any other Spirit whatsoever. But these Fower Elements must be all Mist together as they were in the Three first Days, and never since were, nor shall be, untill the Dissolution of the World, wholy Unmist and Separate, as they were in the first *Chaos*; though that Mistion is and must be Varied by continual Generation and Corruption, to make them more particularly fitt Bodys for the several Superior Spirits, wherof probably every *Species* doth require a Various Mistion, aswell as some Variation of the Figure and Density of the Matter, which is so Varied by the Various Mistion of these Elementary Spirits. Now that they are fower such Elements as I have described, doth plainly appear by their Denominations in the first *Chaos*, and their orderly Preparation in the Three first Days, for the Production of the Superior Spirits, Vegetative, and Sensitive; which I shall more fully discover in my ensuing Discourses therof. And as I have proved that they are not only Matter, nor any Diversifications therof; but do so diversify the Matter, as their Body for themselvs; (and much less are they Produced out of any *Potentia* of the Matter) so also are the Superiour Spirits no Diversifications of them, but do so Diversify them for themselvs in their Various Mistions. By all which precedent Discourses I have sufficiently proved that there are such Inferior Substances and Spirits which are the Bodys or Elements of the Superior, otherwise all Material Spirits should only be Matter, or they should be without their Bodys, and consequently Immaterial: wherefore if they have such Bodys, and yet are not the same with those Bodys, then plainly they are the Spirits, or more Active and Operative Substances which Inform or Inspirit those Bodys, and Reside, and Operate therin, as their Domicils, and Officines; which I therefore call their Element or Subordinate, and Preparatory Substance, or Elementary Principle, of the *Compositum*, which together with the Predominant Spirit therof doth Constitute it such a *Compositum* as it is: by which Composition and Constitution it is Generated, and so Denominated by the Predominant Spirit therof to be of this or that *Classis* in the

Scale of Nature. And this is all that I intend by Element generaly; and whosoever frames any other Notion therof, may thereby doubt and dispute it, and fight with his own shadow; though more particularly we call these first and lowest Spirits which Immediately Consubstantiate the Matter Elementary, and so the fower Elements; becaus they are the first and lowest of Spirits, and the first Elements therof. And sensibly in all Dissolutions of any Material *Composita*, as we may still deprehend Matter, which is the Præelement of all others, so also these fower Elements, which can not now Naturaly Exist Pure, as they did in the first *Chaos*, though we call them this or that Element, as any of them is more Predominant. And so in the Carcass of any Beast, when it is dead, yet there may be still some other Spirits remaining, but most apparently the Elementary; and so in the Trunk of a dead Tree, or Timber, or the like: and there is not only one, but all Fower, which also do always remain in all Chymical Separations whatsoever; so that the *Caput Mortuum* is not only Matter, or only one Element, as in the first *Chaos*, nor their Spirits, as they term them, only Spirits, but also Corporeal Matter, and all the fower Elements, and having some Various Mistion therof, whereby any *Caput Mortuum* still differs notably from others, and any such Chymical Spirit from others; which could not be if they were most Simple Substances in themselvs, or Matter, and only one Spirit, which would make only one *Compositum* therof, not Specificaly Different from others. Nor is it Possible for any Art, or any Power of Nature (according to the present State therof which was first Instituted by God) to Separate these fower Elements one from another; though they are and may be Variously Mist one with another, as also it is not Possible to destroy their fower great Elementary Bodys, Æther, Air, Water, and Earth, in the whole; which though they are also Mist one with another, (and so Denominated from the Predomination of every one severaly in those general Bodys) yet that Predomination of their Elementary Spirit is so notable, and their vast Bodys so notorious, that they do Ocularly declare to every Ey their fower Elementary Natures, and also that they are the Common Elements, and Prepared Bodys of all Superior Spirits, within this Elementary Orb, which they wholy divide among themselvs, and are the great Storehouses and Stocks of Nature, from which all Elementary Bodys were borrowed, and to which the Inferior do

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return again. And accordingly they are as fower ſeveral Provinces, Variouſly Inhabited and Furniſhed with all the *Compoſita*, Starrs, Vapors, and Meteors, Fiſhes, Beaſts, and the like, and Situated according to the Predominance of their proper Elementary Bodys, and requiſite Station therof in ſeveral Spheres one above another, ſo as no Planetical Orbs are. And heer I muſt alſo obſerv from my Text, that there are only fower ſuch Elements, and no more (nor any ſuch ſeveral Kinds of them, or of any of them; as is expreſsly ſaid of Vegetatives, and Senſitives, as I ſhall ſhew heeraſter.) And therefore we have no mention of Stones, Metalls, and the like, in this Hiſtory of the Creation, as of ſeveral Elementary Kinds, becauſ they are only ſeveral *Compoſita* of theſe fower Elements. Wherefore we muſt alſo underſtand that there are not only fower firſt Qualitys of theſe fower firſt Elements, as ſome have ſuppoſed, which could never make ſo many and ſo very Different Sorts of Elementary *Compoſita*, as there are in Nature; nor yet may we aſſigne to any one Element beſides its own Proper firſt Quality ſome other Social Quality of another Element in a more Remiſs Degree, as to Æther or Fire beſides Heat Intenſ, Drines Remiſs: for no Spirit whatſoever hath any Proper Spiritual Quality of another Spirit either Intenſ or Remiſs; of and in itſelf, becauſ every ſuch Spiritual Subſtance is a Proper Spirit in itſelf, and hath its own Proper Qualitys Differing Specificaly, (beſides ſuch as are Genericaly Common to the ſame *Genus*) whereby only we know it to be what it is; and thus, unles we ſhould affirm Æther, or Fire, to be alſo Earth, we can not aſſigne any Drines to it, as any Proper Quality Subſiſting in it, and flowing from it; and certeinly it is no Affection of the Matter, as Extenſion, Figure, Denſity, Gravity, Motion, or the like, which may be Common to Spirits in reſpect of their Bodys: Alſo if it were a Proper Quality of any other Spirit it ſhould not be Remiſs, but moſt Intenſ; for every ſuch Spirit Naturaly Acts to the utmoſt, and there is nothing in itſelf to hinder it, becauſ no Nature doth Obſtruct or Reſtrain its own Operations, unles it be Spontaneous (for that indeed is an Effect of Spontaneity) nor doth Heat Naturaly hinder Drines, but ſhould rather Advance and Aſſiſt it, as all Qualitys of the ſame Spirit are generaly Aſſiſtant one to another; and ſo indeed may the Accidents of ſeveral Subſtances, as of Matter and Spirits, be Analogous, and of ſeveral Spirits, Homœogeneous.

neous; though they be not Homogeneous, as I shall shew heerafter: and thus Drines is more Concordant with Heat then with Cold, which is Contrary to Heat; though neither of them be any Proper Qualitys of the same Spirit of Æther, or Fire, but of other Elements: nor doth Heat Properly or Directly Dry more then Moisten, but only Consequentialy, as I shall also shew heerafter. But they who can affirm all the Elementary Spirits to be Educed out of the *Potentia* of Matter, and that one Element may be Transpeciated or Converted into another, may also affirm what they pleas of their Qualitys, and transfer them from one to another: which Suzugy of Qualitys they have also Invented, as they suppose to Reconcile and Mediate between Contrary Qualitys; though they be not any Degrees of either of them, but Proper Qualitys in themselvs, and Accidents of other Substantial Spirits: nor doth that Contrariety of Qualitys need any such Mediation, being Produced by Degrees out of their Potentialitys, which are not Contrary Actualy, or otherwise Mist by Degrees into their Actual Contemperature. The Ignorance of which Doctrine of the *Chaos*, and the Potentialitys therof, and the Imaginary Supposition of such a *Potentia* of the Matter, out of which not only Existences, but the very Essences both of Accidents, and also Substances, may be Educed, by Equivocal Causalitys, Transpeciations, and such new kinds of Creation, and Annihilation, as men have pleased to Invent, instead of the true Creation, and *Chaos*, which God hath Made, and Revealed to us, hath been the Fundamental Error, and Root of all the Consequential Absurditys. But yet while they thus Grope in the Dark, they Catch at some Shadows of Truth; as plainly their *Potentia* doth allude to the Doctrine of Potentialitys, and is Substituted instead therof: and so this Supposition of several Different Qualitys in the same Substance doth partly Intimate another great Mystery in Nature, which I shall now discover and unfold; that is, That indeed there are several Qualitys also Created Essentialy in one and the same Substance, Proper to itself, and so subsisting in it, and flowing from it, as I have already declared concerning Matter and the Affections therof; not only Mediately, as Figure from Extension, and Gravity from Density, and the like, (which are only several and Realy distinct Products or Propertys of the same Qualitys) but as others Immediately Subsisting in, and flowing from it; as Extension, and Density, which are not such

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ſeveral Propertys one of another, for ſo the ſame Orbicular or Cubical Extenſion and Figure may be either Denſ or Rare, Grave or Light, and the ſame Denſity or Rarity, Gravity or Levity, may be of any Extenſion or Figure whatſoever; and they are not concerned otherwiſe one in another, but only as they are Social Qualitys of the ſame Subſtance: ſo as every Extenſion or Figure muſt have ſome Denſity, and all Denſity ſome Extenſion and Figure Indefinitely. And thus in the Æther there is not only Heat, but alſo Light, and Planetary or Circular Motion, and perhaps ſeveral other Principles of Influential Virtues and Qualitys not only proceeding one from another, as Particular Propertys, but Immediately Subſiſting in, and flowing from the Æthereal Subſtance; and ſo Cold, and ſome Active Principle of Sound, and others, in Air; Moiſture and ſome Active Principles of Odor, and Sapor, and others, in Water; Drines, Opacity, Conſiſtence, and Magnetike Polarity, and others, in Earth: as certeinly we all know that there are ſuch Various Virtues in Vegetative and Senſitive Spirits. Of all which I ſhall Diſcourſ heerafter, and now only obſerv that of theſe, and the Various Miſtures and Temperatures therof, all the Elementary *Compoſita*, like ſo many Arithmetical Changes, are Compounded, which therefore are not mentioned in this Hiſtory of the Creation; becauſ they are only Compounded of ſuch other Simple Eſſences before mentioned, and not of any new Eſſence Created in the Begining, and not before mentioned, as Vegetative, and Senſitive Spirits, and the particular Sydereous Spirits: wheras all Sulphureous, Mercurial, Saline, Sanguineous, Bilious, Phlegmatike, Oleous, Saxeous, Vitreous, Ligneous, Carneous, Coriaceous, Oſſeous, Corneous, and many other ſuch Elementary Qualitys, are not Simple in themſelvs, but Compounded of others, which are ſuch, and were the firſt Created Eſſences, and Principles therof. And if we could Inveſtigate and find out all thoſe Simple Qualitys (wherof very many are ſtill Occult to us) none of theſe Compound Qualitys could be any longer Occult. And yet many Curious and Chymical Wits, becauſ they will not freely acknowledg their own, which yet indeed is Human Ignorance, and Common to us all, will alſo Subſtitute as Simple Principles, ſuch Compound Qualitys of *Sal*, *Sulphur*, and *Mercury*, though others among themſelvs not ſatisfied heerwith do alſo aſſigne many more of the reſt; and yet none of them all are Principles or Simple Eſſences,

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but only Compounds, and Decompounds of others, or one of another. And the last Chymical Separation that can be made, Sensibly will be only a Reduction to the fower first Elements, that is, to somthing wherin one of them is most Predominant, as in their fower great Elementary Bodys; though like them they can never be Perfectly Unmist and Separated. Thus *Sulphur* is as Fire, Predominant in the Composition therof, *Mercury* as Water, and *Sal* as Earth; but becaus Air is the most Insensible of all Elements, therefore they have not observed it among the rest in their Separations, nor in this or any other of their Distributions: so that if we should wholy trust to Chymists, we might even lose one of the fower Elements; though they are to be commended heerin that they have not assigned or set up Mercury Volant, which is only a Vapor, instead of it. Also like Air there are many other Simple Essences of Elementary Qualitys, which in their Mistion with others do not Sensibly so betray themselvs, as those which they call the fower first Qualitys, and yet Philosophers have found out the Sent of some of them, as Opacity, Magnetical Virtue, and the like; which I shall endeavour to prosecute and promote as farr as I may in some previous Essays, and so recommend the more Curious Search therof unto others, as one of the greatest *Desiderata* in Philosophy: and now proceed farther. As Elements are the Second Matter, or Prepared Body of Vegetatives, so are they also of Sensitives, as a Third Matter, or Prepared Body therof; and so Sensitives do Comprehend Subordinately in their Composition Vegetatives Immediately, and Mediately the Elementary Spirits, and by them more Mediately the Matter, and Vegetatives Immediately the Elementary Spirits, and Mediately the Matter, and Elementary Spirits Immediately the Matter; but not Convertibly; nor are any of the Superior Educed out of the *Potentia* of the Inferior, becaus they are Superior, but only Subordinate them unto themselves, as I haue said. And as Elementary Spirits require several Diversifications of the Matter to make fitt Bodys therof for themselvs, and accordingly diversifie it by their own Architecture, so do Vegetative Spirits both it and the Elementary Bodys, and so Effigiate it, and Temper them, for their own Proper Use, as I have said. And I suppose all Plastike Virtue to be from these Inferior Spirits; that is, Inorganical from Elementary, and Organical from Vegetative: and though the Sensitive Spirits do Predominate and may

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Govern them, yet that is in another and higher maner by Spontaneous Perception and Appetite, as Living Souls; and their Plastike Virtue is of a Mechanike and another more Vital Kind, that is, Artificial and Irgenious: and so that they are not Architects of their own Bodys, as hath been supposed by others, but of their Cells, Nests, Houses, and the like Artificial Habitations: for if a Beast first Live the Life of a Plant, then certeinly the Sensitive Spirit, which doth not yet Live and Operate doth not Fabricate the Curious Structure of its own Embryonical Body. Also all Sensitive Operations are with Sensation, that is, Perception and Appetite; but we do not so Sens the daily Concoction, Nutrition, and Augmentation of our own Bodys, nor Formation of Seed therin; and therefore it is not the Proper Work of the Sensitive Spirit, but of the Vegetative, which is apparently Plastical in itself, and Forms its own Body Organicaly, as in Trees, Herbs, and Grass, nor hath any one Spirit in itself the Proper Qualitys of another. And though Elementary Spirits are Definitely Fower and no more, yet these Vegetative and also Sensitive Spirits, are Indefinite; and it is so said of them, that they were brought forth after their kinds Indefinitely, and so all these *Species* of Beasts and Fowls were preserved in the Ark, and can not be Multiplied, nor shall be Diminished. Nor are there only such several Spirits of Trees, Herbs, Grass, and of every *Species* of them, which by a Proper Plastical Virtue Created in and with them by God do severaly Effigiate their Proper Bodys, and the Organism therof, but also Proper Subordinate Vegetative Spirits of Fishes, Fowls, and Beasts, and of every *Species* of them, which doth so Effigiate their Proper Bodys, and the Organism therof: Yet as the Vegetative Spirits are not also Elementary, nor do, nor indeed can, contein the Contrary Qualitys therof in themselvs, so neither do Sensitive contein in themselvs Vegetative and their Facultys, though they are Compounded with their several and Proper Vegetative Spirits which Organise their Sensitive Bodys, and which I suppose can not be so Organised by the same Plastike Virtue of any Tree, Herb, or Grass, which is Proper to the Spirit therof, and would only make it to be of that Shape and Substance. And consequently I conceiv that there is also a Proper Mistion and Temperature of the Elementary Spirits and Qualitys, which is so Subordinate and Subservient to the Sensitive Spirit, and that they are all Consubstanti-

ated together in and with the Matter in the Sensitive *Compositum*. And lastly, a Proper Sensitive Body thus Prepared is a fourth Matter or Body, of the Intellective Spirit of Man; and the Body of *Adam*, into which God first Inspired his Human Spirit, was such, and more then a Statue of Clay, as is commonly supposed. And this Spirit of Man thus Inspired is of another and farr Different Kind from all the former, which were not Inspired into, but Educed out of the Inferior Bodys therof; nor is it so Consubstantiated with them as Material Spirits, becaus it is Immaterial, and a Perfect Substance in itself, which needeth no such Consubstantiation, but like an Angelical Spirit can also live and Operate Separately. Nor yet doth it only Possess a Body as an Angel may; but hath a Natural Union and Composition with it, and doth Naturaly Inspirit or Inform it, that is, Live, and Operate in it as in a fitt Domicil and Officine in this Conjunct State; and Predominate and Govern it, as a Master in a Ship. All which I shall more particularly declare heerafter, having now generaly treated therof only to discover and describe this Scale of Nature, as God did first Erect it, and as it still standeth, whose *Basis* is the Matter, and whose *Acme* the Intellective Spirit; wherin Man also is Coordinate with the Immaterial and Separate Spirits of Angels. And so all Created Nature is not only Localy but Politicaly United, that is, all Coordinate, except Angelical and Human Spirits, may be properly Mist, but Subordinate, except Angels, only Composited together, but not Confounded, either by Transpeciation of one *Species* into another, or Production of one out of another, as some have supposed; nor, by Midle Natures, or Participles, as they call them, partaking of the Natures of several *Classes*, which is more Monstrous and Anomalous then the Generation of Mules, and the like, which are only of one and the same *Classis*, though of two Confused *Species* therin; but every one is in itself either Spirit, or not Spirit, as all Elementary, and other Material Spirits; Vegetative, or Not Vegetative, as Moss and the like; Sensitive, or not Sensitive, as all Plantanimals, Intellective, or not Intellective, as Idiots, Lunatiks, or other Human Monsters: though there be such Compositions and Subordinations *Classes* and Hosts of them all, and of one unto and with another, as I have declared; and as *Moses* hath concluded this History of the Creation, *Thus the Heavens and Earth were Finished, and all the Hosts of them.*

VI. And

VI. And yet ſome, who will not ſo underſtand it, ſeem to deny any ſuch Scale and Order of Nature, and any ſuch Oeconomy and Polity therof; becauſ they alſo deny thoſe very Natural Principles, Powers, and Virtues, which God hath Immediately Created, and Imprinted therin; ſince they can Educe no ſuch things from the rude Matter, nor indeed doth any ſuch Wiſdom or Will appear to be Actively in any Inferior Natures which are neither Senſitive, or Intellective; nor yet doth it proceed from the Senſitive, and Intellective Faculty's in the Superior Natures, nor is it in the Univerſal Nature of them all, and therefore they laugh at all ſuch Expreſſions, as that Nature intendeth the Beſt, Affecteth Union, Abhorreth Vacuity, and the like: and I ſuppoſe no man ſo void of of Senſ and Intellect as to conceiv it capable therof, but when we ſee and muſt acknowledg ſuch Analogous Effects therin, we muſt aſcribe them to ſome Analogous Cauſalitys, and expreſs them by ſuch Analogous Expreſſions, which is all that is Intended thereby; that is, that God hath ſo Ordered, Compaginated, and as the Apoſtle ſaith, *Catartiſed*, Nature, that it doth Naturaly Cauſ the ſame Effects, and indeed more Powerful and Political, then our Intellective and all the Senſitive Spirits therin can Cauſ and Produce. And that God doth not ſo Cauſ theſe wonderful Effects Immediately by himſelf as he doth Supernaturaly Conſerv all things which he hath Created, Upholding them by the ſame Word of his Power; but Mediately by Natural Principles, Powers and Virtues, which he who is Infinitely Powerful and Wiſe, ſo Immediately firſt Created and Imprinted in Nature, and thus ſett it in Order in the Six Days, whereby it doth and ſhall ſo continue in itſelf untill the laſt Diſſolution therof, to Cauſ and Produce ſuch Effects; which certeinly as none can deny them Realy to be ſuch, ſo unles he aſcribe them unto the Immediate Power and Wiſdom of God himſelf, and ſo only to ſuch a Continued Creation without any other Natural Cauſation (wheras he ſaith, he Reſted ftom all theſe Works which he had thus made and ſet in Order in the Six Days,) he muſt acknowledg them to be alſo Natural and Created Cauſalitys then Produced and Actuated, (which indeed were the very Works of all the Six Days) becauſ ever ſince there are manifeſtly ſuch Effects, and therefore there muſt neceſſarily be ſome Cauſes therof, either Supernatural or Natural; for ſuch Order, Oeconomy and Polity can not be reaſonably ſuppoſed to be Caſual, becauſ it is, not only

most Regular, but also most Constant (which yet *Epicurus*, who was more Rational and true to his own Principles, did affirm) but must be either, as some others affirm, by such Immediate Divine Causation, which doth render all Philosophy (which is the Study of Nature and Natural Causes and Effects) Vain and Impertinent: Or otherwise it must be by such Natural Principles, Powers, and Virtues, as we have: as I have declared and proved to have been so Created and Instituted; and this indeed is that which we call Nature, Subsisting in all the Particular Natures, which do Particularly so Concurr and Cooperate therin; not through any such Active Wisdom or Will in themselvs, but by their own Natural Principles, Powers, and Virtues, which God, who Created and Imprinted them severaly and Particularly, did also so Coordinate and Direct Relatively and Maturely one toward another as that they should so Concurr and Cooperate to the Universal Good, Safety, and Beauty of one another, and of them all, and consequently of this Universal Nature. As an Artist who makes a Clock or Watch, or the like, so frames the Wheels and Parts therof, and so setts them together, and so applys the Weight or Springe therunto, that they shall all Cooperate and Complete the Engine, for that Use, and the Production of that Effect, which he had Designed: and as Art, which is the Nature of Man, doth thus work by Artificial and External Application of Natural and Internal Principles, Powers, and Virtues, so doth Nature, which is the Art of God, Act and Effect the like, and more Curious Engines, wholy by them, Naturaly and Internaly: whereby not only the Weight or Springe, but also the very Plastical Figuration, Gravity, Motion, and mutual Application, is so Caused and Produced, though without any such Artificial Wisedom, or Will, in any Automatous *Compositum*, more then in the Clock or Watch itself, but by Created Impressions in the one Naturaly and Intrinsecaly as the others are so Effected by Violent and Extrinsecal Application of that which is Natural in itself. And yet they who can affirm Sensation, and perhaps Intellection itself, to be only Motions of the Matter, might also, if they pleased, ascribe therunto Sens and Intellect, (as some have affirmed Elementary Natures to be Sensitive) which would not only satisfy their Doubt heerin, but also confirm their Opinion of the other, though both be equaly Falss, and most contrary to all Sens, and Intellect. And this acknowledged and agreed want

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of any such Wisedom and Will in Nature, which yet doth Produce such undeniable Effects, doth most Sensibly and Intelligibly prove a most Wise, and Willing, First Caus, that is, God, who, as I have already proved, that he Created all things out of Nothing in the Begining by his Infinite Power, so he also both Created them in their first *Chaos*, and afterward Ordered them in the Six Days, and so Catartised the whole Frame of Nature with such Polity and Oeconomy, as doth Invincibly prove his Creating Wisedom, and Will, by these Created Effects therof, which are so Naturaly Produced by Nature, as it is Gods Creature, Artifice, and Engine; and yet itself hath neither Wisedom, nor Will Actively, as Intelligent Creatures have in themselves. And thus the rude Matter which of all others hath least therof, yet hath thus Naturaly in itself Motion to Union, and also to Station, and thereby doth Naturaly cast the whole Body therof into a Perfect Orb, which is the most United, Uniform, and Capacious Figure; which also every Particular Body therof doth Affect and Endeavor as farr as it can, and doth Place all the Particular Bodys in their due Position. And if Matter may Act thus Politicaly without any Policy in itself, Why may not also Material Spirits, which are more Spiritual and Active, have their Particular Plastical Vertues, whereby they may also Effigiate their Bodys in fitt and requisite Figures for themselvs, Inorganicaly, or Organicaly, and Oeconomicaly, though they have no Oeconomical Wisedom, or Will, in themselvs. And even in Sensitives the same Effects are Produced without their Sentiment, and so let Man, who Comprehends all these Inferior Natures in himself, consyder his own Body; and whether he doth Caus and Order the Introduction of his Finger to Union, or the Falling down of his Body through the Air to Station, or can hinder them with all his Sens, and Intellect, or whether therewith and thereby he doth Plasticaly Figurate and Effigiate all his Members, or can add a Cubit to his Stature, or doth so perform those most Curious and Chymical Works of Nutrition, Augmentation, Sanguification, Seminification, and the like. And this Polity and Oeconomy is not Proper to any one Nature, but is Particularly in every one, and Universaly in all, which are not only Subordinate, but do accordingly Communicate one with another. Thus every Individual Nature is a *Compositum* of more or less Principles or Parts, and more or less Oeconomicaly Composed, and Or-

dered, according to the Particular Nature and Orb therof, which is heerin a Module of the great Orb of the Univerſ. So alſo all Specifical Natures, which are Homogeneous, do Comply and Conſort together and open their Bodys one to another, and ſo alſo Generate one another, and there is ſome Accord, though leſs among Homæogeneous, and as we ſay, *Par Pari*; and there are certein Analogys and Confederacys between Heterogeneous; yea even Adverſ and Contrary Natures do thus Conſpire together for the Common Good, as Reſt and Motion to Union, which may be Upward, and to Station which is downward, and ſo Heat and Cold, Moiſture and Drines, do all make a fitt Temperature for all Elementary, as well as Vegetative, and Senſitive *Compoſita*. And their own Proper Qualitys can not Actualy Exiſt without ſuch Temperature of and with the reſt; which is their Political Perfection, though the others be their own Proper and Private Perfections. and therefore in the *Chaos*, though the Elementary Spirits did then accordingly Conſtitute the Matter of their Fower great Bodys by requiſite Proportions of Extenſion, Spherical, and Globular Figures, Denſity, Rarity, and their ſeveral Stations, and the like; yet they could not Actualy Produce their own Heat, Cold, Moiſture, Drines, and their other Active Qualitys, before they were Prepared and Prediſpoſed by the Divine Spirit with fitt Miſtions and Contemperations; nor could they, or can they, yet Exiſt in their utmoſt Vehemence and Intenſion, without ſuch Contemperation (which as I have ſaid is moſt wonderfully Produced by Degrees out of their Potentialitys into ſuch Miſt and Contemperate Actualitys, more Naturaly then by their Actual Extremitys, which Violently Oppugn one another, and thereby endeavor to deſtroy one another) and Such Actual Concertation and Oppugnation, which at laſt doth deſtroy one or both of them; as Flame, which is almoſt continualy Incenſed and Extinguiſhed, and the like: and yet theſe Contrary Qualitys of the Elementary Spirits are thus Naturaly Miſcible, wheras the Proper Accidents or Affections of any Subſtances of Different *Claſſes* are not nor can not be ſo Miſt in their Conſubſtantiated *Compoſita*. As in a Senſitive *Compoſitum* the Extenſion, Figure, Denſity, Gravity, Motion, and the like Affections of the Matter are not ſo Miſt with any of the Spiritual Qualitys; though they are United or Compoſited in the whole *Compoſitum*. Nor the Elementary Qualitys with the Vegetative, nor

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the Vegetative with the Senſitive, but as their Subſtances are of ſeveral *Claſſes*, which can not be ſo Miſt as they of the ſame *Claſſis*, though Compoſed together, ſo they continue ſeveral in themſelvs, though they mutualy Contribute and Cooperate in the whole, becauſ they Subſiſt in their own ſeveral Subſtances. And becauſ Individual and Specifical Natures do thus Confederate, therefore there is alſo ſuch a Polity and Oeconomy of the Univerſal Nature which doth Subſiſt in them all; and not only a Scale of Degrees, wherof I diſcourſed before, but a Republike of all the *Cives* and Societys therof. And as Beauty, Virtue, Piety, and their Symmetrical and Conformable Excellencys, are the moſt Excellent things in Nature, ſo is this Polity, and Oeconomy, the Strength, Goodnes, and Glory therof. Wherefore as he is no very good Anatomiſt, who though he may know all the ſeveral Members, Parts, and Particles, of the Body as they are in themſelvs, yet knoweth nothing *De Uſu Partium*, and the whole Compoſition, Cooperation, and Benefits therof; ſo he is no good Philoſopher, who though he could know all the Atoms, and Corpuſcles of Matter, and all Spirits, and Subſtances, and all their Accidents, and Affections, and the very Eſſences both of Subſtances, and Accidents; as well as their Exiſtences, ſeveraly, as they are in themſelvs, yet knoweth not, or rather will not know any thing of their Mutual Union, Analogy, Confederacy, Cooperation, Oeconomy, and Polity, and all the Benefits and Advantages therof, which God hath Created in and with this Republike of Entitys, which we call Nature; and ſo Nature doth accordingly Effect, not only for his own Uſe and Service, but alſo for his Contemplation; whereby he doth neither acknowledg God to be the God of Nature, nor indeed Nature to be Nature, nor her *Mundus* any *Mundus*, and ſo renders his own Philoſophy no Philoſophy; which are ſuch Abſurditys, that I doubt he who only reads this Diſcourſ, may eſteem it Idle and Superfluous, but if he alſo read their Diſcourſes, he will find that they have made it Neceſſary. And I rather fear that all this, and much more that may be ſaid, will not be ſufficient to convince them, whoſe Delicate Witts are grown ſo Wanton, that they can not be pleaſed with any thing unles it be ſome Curious Novelty, and Ingenious Error, and ſo much delight to wander in the wild Labyrinth therof; that they care not to be brought out of it; where I ſhall therefore leav them to themſelvs,

selvs, and proceed in the beaten Path of Common and Solid Truth, which God hath sett out and Revealed in this History of Creation, wherin he hath shewed us how it was his very Counsel and Designe, thus to sett the whole Frame of Nature in Order in the Six Days, whereby he did Perfect it, and distinguish it from the first *Chaos*; and as he did Proclaim the Particular Goodnes of his Particular Works in their several Days, wherin they were so Ordered, so when the whole System therof was finished, *God saw every thing which he had Made, and behold it was Very Good*: which *Valde* and the Emphatical Addition therof plainly shews another Entity and Bonity of Universal Nature, Subsisting in all the Particular Natures besides their Particular Entitys and Bonitys, which were before declared. And this is the Law and Order and Oeconomy of the whole Houshold and Family of Nature, which indeed is Nature, and was thus Setled and Fixed in the whole *Series* and Cours therof, and so still Continued by virtue of the Divine Benediction in all Successive Generation and Corruption; as the Psalmist saith, *He Commanded and they were Created, He hath Stablished them for ever and ever, He hath made a Decree which shall not pass*: whereby all things are thus Constituted and United into one great *Compositum* of the Univers, wherin they are all either Coordinate, and Inservient, or Subordinate, and Subservient one unto another. And particularly this whole Visible World unto Man, as I shall shew heerafter, and Men and Angels Immediately unto God, the Author, and End, of the whole Creation.

SECTION VII.

SECTION VII.

And God said, Let there be Light; and there was Light. And God saw the Light that it was Good. And God Divided the Light from the Darknes. And God called the Light Day, and the Darknes he called Night. And the Evening and the Morning were the First Day.

EXPLICATION.

God Produced out of the Æther the Proper Qualitys therof, and particularly Light, whereby it was Perfected, and which was the Goodnes therof, Conformable to the Divine Wisdom and Will of the Creator, and Law of Creation. And he made Diurnal Light to be in one Hemisphere of the Æther, which was Divided from Nocturnal Darknesin the other, And so made Day and Night Artificial. And the Evening which Commenced from the Begining, and the Morning of Diurnal Light, were together the First Day Natural.

ILLUSTRATION.

1. *Of Æther.* 2. *Of Heat.* 3. *Of Light.* 4. *Of Color.* 5. *Of Day and Night.* 6. *Of the Goodnes of the Works of the First Day.*

I. HAving before discovered and declared the General System of Nature, I shall now more Particularly discourse of the several Kinds of Creatures as they were in the Six Days;

wherof Æther is the First (being that Firmament of Heaven mentioned in the Fourth Day, and so made before) which is Supreme of all the Elements, and next to Superæther (which is Superelementary, as I have said, and probably was Perfected when it was Created in the Begining) and yet Æther hath been esteemed to be the very Higheſt and Utmoſt Sphere of the whole World by Heathen, who made it to be their Superæther, or *Cælum Dæmoniacum*, wherin they placed all their chief Idols, which were the Planets and Starrs therof; being indeed not only the Higheſt, but also the the Greateſt, and moſt Glorious, of all Spectable Creatures. And some of their Philosophers induced therunto, or in compliance with the Popular Religion, did not only deny the Æther to be Elementary, and Igneous; but also seemed to doubt whether the very Matter therof were Common and Homogeneous with Elementary Matter; as certeinly it muſt be, if it be Matter, (which is one moſt Common and Homogeneous Subſtance in itself, and only Diverſified according to the several Accidents and Affections therof, that are indeed Common to all Matter) and it muſt be Matter, otherwiſe it could not be a Body. And so is also the very Superæther, and all Bodys whatsoever. But the Matter and Body of Æther is moſt Rare of all the Elements, becauſ the Spirit therof doth so Require it, and Cauſit to be; and therefore, as I have said, it is Higheſt of all Elements, though not so Rare as the Superæther, which is therefore the Higheſt of all Bodys. And so Rarity of Matter, becauſ it hath leſs Matter in the same Extenſion, hath therefore some fitnes and Analogy to a more Spiritual Subſtance, and is as it were a more Spiritual Body, as more groſs Spirits are more Material: and this chief Elementary Spirit of Æther requireth a more Rare Matter then the reſt, and so also doth Culinary Fire Rarefy, as I ſhall ſhew heerafter; but yet, as I have said, the moſt Rare Matter is Matter, as well as the moſt Denſ, and not Spirit, but of another Different *Claſſis*. And as the Body therof is very Rare, so also it is very Fluid, though Rarity and Fluidity be not one and the same, more then Denſity and Conſiſtence; yet as Denſity is Analogous to Conſiſtence, so is Rarity to Inconſiſtence or Fluidity. And therefore an Adamantine, Golden, Brazen, or Specular Æther, or Planets therin, are rather Poetical, then Philoſophical. And wheras *Elihu* saith, *Haſt thou with him ſpread out the Sky, which is ſtrong, and as a molten Looking Glaſs*, or *Speculum*?

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The word Sky, alſo ſignifieth Upper Clouds in the Original, and if it were to be rendred Sky, might be aſwell underſtood of the Air, which is an *Expanſum*, and ſpread out, as well as Æther; and that very Expanſion ſeems to imply no Conſiſtence in either of them: and the Compariſon is not of a Conſiſtent, but a Molten or Fuſile *Speculum*, ſuch as Water or the like: Now plainly the Text intendeth the Upper Clouds, wherof the precedent Diſcourſ is in the Context, and which being Anhydrous do ſo Reflect the Light, like ſuch a Molten Looking Glaſs. And yet Tranſlators render *Expanſum* (as it is Originaly) Firmament, in favor and compliance with Græcian Philoſophy; wheras certeinly the Air, which is alſo termed *Expanſum* as well as Æther, is not Solid or Firm. And the Reaſon aſſigned why the Æther ſhould be Solid and Firm is more Vain then the *Hypotheſis*; which is, becauſ it Moves one way, and the Planets therin another way, and therefore there muſt be Seaven Spheres of them, and an Eighth of the Fixed Starrs, and to theſe is ſince added a Ninth, and a Tenth, which muſt be the *Primum Mobile*, to ſolv theſe *Phænomena*. Wheras in the Firſt Day there was only one Circumvolution of the whole Æther, one and the ſame way, to make Day and Night, and ſo untill the Fourth Day; and then we do not read of any ſuch Diviſion therof into Spheres, as of the Diſpoſition of the Water and Earth into a Terraqueous Globe, but only of the Creation of the Starrs. Nor is this Suppoſition of Æthereal Spheres any Solution of the ſeveral Adverſ Motions; for perhaps the ſlower Motions of the Fixed Starrs (as they are therefore ſo termed Comparatively) which are alſo Adverſ to the Motion of the Æther may be as ſeveral, and then they muſt alſo allow as many ſeveral Spheres for every one of them, and ſo for any of the Planetary *Satellites* about another Planet. Alſo the Circumvolution of them by the *Primum Mobile* muſt be either by a Corporeal and External Impulſ, and then they muſt Cohere to it like the Circular Spheres of an Onion (which is the uſual Compariſon) which Coheſion will alſo make the Circumvolution Conjunct and one and the ſame way; as if you turn an Onion ſo about: otherwiſe if they do not ſo Cohere, no Motion of the Inferior Spheres will be Cauſed by the Circumvolution of the Superior or *Primum Mobile*, as if you turn a Wheel about an *Axis* without any Contact; much leſs can it Move all

the others so many several ways; Or it must be by some Spiritual *Potentia* which must be either of another Spirit, and so Infinitely; or of itself, as indeed it is, and then the several Planets and Starrs may also aswell have such several *Potentia* in themselvs, as the *Primum Mobile*, and so many several Spheres Moving themselvs and their several Planets in them by such several and Adverse Motions: Also firmnes or Consistence is a Proper Quality of Earth, as I shall shew heerafter, and not of Æther; and though the Æther be Mixt with all the other Elements in some small Proportion, yet the Consistence which it hath thereby is very Inconsyderable, and less then of Air, and Water (which yet are Denominated Fluid Bodys, and not Consistent) and is rather like the Terrene Opacity therof, which doth not fix any Color in Æther, nor Reflect like Earth, or Water, though very much Assisted by the vast Profundity therof, which is somwhat Analogous to Opacity, as well as Density; as may appear by Deep Water which seems more Black, and Specular, then Shallow. The Spirit of Æther is Fire, as the very Name therof doth Import; which also plainly declareth the common Opinion of the Antient *Græcians* (though they who deny the Thing would also elude the Etymology.) And so the *Persians*, who worshipped the Sun, therefore Consecrated Fire, and used it in their Mysterious Ceremonys. And all Language, both Sacred, and Profane, hath ever stiled the Sun Hott, which all Sens doth likewise attest, (though this also and any thing whatsoever will be evaded by a resolved Error:) and instead therof Fire is placed in a new Invented Sphere or Province, which it must have in Conformity to the great Bodys of the other Elements, and which is termed, *Concavum Lunæ*, or *Cælum Incognitum*. All which Absurditys were only Philosophical Inventions to preserv the Idolatrous Reverence and Religion of Heaven, which is now together with them to be Exploded by Christianity. Nor do I suppose Æthereal and Culinary Fire to be several Elements Generically Different, becaus they have the same Proper Qualitys, Heat, Light, and others; though they may perhaps Differ more Specifically; becaus Æther hath other Proper Qualitys, as Circular Motion, and Influential Virtues, which may not be in the other, or at least not Actualy; as the Elementary Earth hath Magnetical Virtue, which is not Actualy in all Terrene Bodys: and there is certeinly a greater Mistion of the other Elements in Culinary Fire,

Fire, which renders it more Impure then Æthereal. But there is Heat very notably in Æther, which is Instrumental in the Rapid Motion therof; for Heat being a most Active Quality is also very Motive; I know not whether any Actual Heat can be without Actual Motion; though Heat be not only Motion, nor Motion Heat, as I shall shew heerafter. And this Motion of Æthereal Heat must necessarily be Circular, becaus, as I have shewed, if there be more Motion then the Body Moving can Exercise and Expend Directly, it will Move it Circularly; and Æther can not Move any other way; for being more Rare then Air, it will not Move Downward into it, and being more Dens then Superæther, which is also Superelementary and most Heterogeneous, it can not Move Upward into it; but being already in its own Proper Sphere, and Station, it Moves only in it, which must be Circularly; and therefore also it Moves Perpetualy, becaus it is Moved by its own Proper *Potentia*, which is alway Actual in itself, and not Corrupted or Obstructed by any other; and it therefore Moves Equaly, becaus there is none other Causality to make any Increments or Decrements therof. And it is by a Spiritual Quality in itself which is not to Rest as the Motion of Matter. Nor is it Invaded by the Superæther; and it is Defended from the Ambient Air by that Rapid Motion, which affordeth no Time requisite for the Air to Operate upon it: and therefore it is more Ingenerable, and Incorruptible, then the Inferior Elements, and probably doth not Emitt any of its own Matter: and yet by its Emissary Rays is itself the greatest Operator of them all, and doth Generate and Corrupt them; and so generaly all Superior Elements do most Operate upon the Inferior, and the Inferior less upon the Superior. Nor doth it need any Fuel, becaus it is not continualy Incensed, and Extinguished, like Flame, whose Individuality is therefore Varied as Successively as the Fume, but Æther hath its own Spiritual *Potentia* always Actual in itself, which is not Corrupted nor Obstructed by any others. But I conceiv that the Regularity of the Æthereal Circumvolution Exactly in every Day Natural is from a Special Quality which was also Actuated therin in this first Day and so continueth, and is a Natural Motion therof Analogous to the Verticity of the Magnet, whereby it reduceth itself to the Regularity of its Polar Position. And this I collect from the Text, wherin it is said, that God so made Day and Night therin:

and though the Proper Æthereal Virtue according to that general Power therof doth so carry it about with a Perfect Regularity, yet since it hath been Accursed and Blasted as well as Earth for the Sin of Man there are many particular Alterations, Generations, and Corruptions, appearing in it, such as *Maculæ*, Comets, and the like; as I shall shew heerafter, which plainly prove both that it was Mist with the other Elements, and was a Generated *Compositum* in the first Perfection therof, and that now it is Imperfect: and yet the Diurnal Motion therof is still as Regular as before, as well as the constant and Immovable Position of the Earth: and therefore most probably there is some other Special Quality which doth Preserv it in that Regularity, as Verticity doth the Earth and Magnets in their Polar Positions. And as this Element is most Active and Operative, so God, who doth nothing in vain, and is stiled *The God of Order, and not of Confusion*, did therefore first Perfect it, and Produce the Active Qualitys therof, as the Chymical Instruments of Nature, whereby it was first sett on work; and so at last when he shall Dissolv this whole Elementary World, it shall be by Fire, both Æthereal, and Culinary, Congregated and Condensated (as before the Fountains of the great Deep were broken up, and also the Cataracts of Heaven opened) and shall thereby again Melt down this whole Inferior Globe, if I may so speak, with a Deluge of Fire, as he did formerly overflow the Terraqueous Globe, with a Deluge of Water; wherof he hath thus farr declared unto us the maner, but not the Time; for *Of that Day and Hour knoweth no Man, no not the Angels in Heaven*; nor may we compute it by any Motions of the Heavenly Bodys, or of any of them; for this Dissolution not being Natural, but Violent, doth therefore attend no Natural Causality, but may be at one Time as well as another.

II. The Spirit of Æther being Fire, the most Proper Qualitys therof are apparently Heat, and Light; which are neither one and the same in themselvs, nor do Immediately Subsist or Proceed in, or from one another, but both in and from the Substantial Spirit. For apparently one may be Actualy without the other, as Heat without Light, in Fume; and if there be not also Light without Heat, as in the Gloworm, and other such Bodys, yet certeinly the

the Actual Heat is not Proportionable to the Actual Light therof: and heer in the Text Light only is Named, and not Heat, though they are partly Synonymous in their Original Etymology, and very Congenerous and Social Qualitys in Nature, Proceeding from the same Substantial Spirit. But I can not conceiv Drines, as I have said, to be any Second Quality Proceeding from Heat, nor indeed very Symbolical or Homæogeneous with it, but rather another Collateral Quality of Earth, and Indifferent between Heat, and Cold; for Vapors, Oils, and the like, which are very Moist Bodys, are more Inflammable then Salts, and Ashes, which are very Dry, and all Heat doth Melt or prepare for Fusion, which doth Actuate Moisture; wherefore all Consistent Bodys generaly are Actualy Cold, and Actualy Dry, or at least, Indifferent to either Heat, or Cold, to be Actuated in them. But the Proper Action of Heat is to Heat, or Univocaly to Generate or Produce Heat out of other Inflammable Bodys; which thereby it doth also Move, becaus as I have said, it requires a most Rare Body, and so when Heat begins to be Actuated, it begins to Rarefy the Body Heated, which being an Expansion therof, necessarily causeth some Local Motion: and so it Melteth and prepareth for Fusion by Rarefaction, and even Iron Heated doth Swell before it Melt; and in order therunto it doth Convell and Corrode the Parts of the Bodys, as may appear by the Operation of *Aqua fortis* in Dissolution of Metalls: and as it thus Operateth in respect of Corporeal Rarefaction, or Comminution, which is Preparatory therunto, so it is Spiritualy Active in itself, and Causeth Motion, as a fitt and Analogous Instrument therof, aswell as in its own Æther, as I have shewed; though that be probably as Rare as it can Naturaly be, becaus it is the most Rare Element, and can not be more Rarefied by any other Elementary Quality, and hath already Produced the greatest Rarity that it can in itself. But though Motion be such a notable Instrument of Heat, as generaly it is also of all the Operations of Material Spirits upon the Matter, yet neither Heat nor any others are only Motion, as I have formerly shewed generaly, and shall now shew particularly concerning Heat, which is not so much Caused Originaly by Motion, as it is a Caus therof, though the Generator may Generate Heat, which was Potentialy before in the Body wherin it is Actuated, by Motion, as I have said, Mediately, but more Immediately by

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Rarefaction; and its own Æthereal Motion is Caused by its own Natural Heat, and not Heat by Motion: for so Light and Heat were Created in it first, at least in order of Nature, before there was any such Motion or Circumvolution of the Æther, which followed thereupon, and whereby God Divided the Diurnal Light from the Nocturnal Darknes; and so made Day and Night Artificial. Also if Motion be Formaly Heat, and Heat Motion, then Cold which is the Contrary therof must be Rest, and Rest Cold; which it is not; for it doth both Expand Ice, and also Compress Water in the Sealed Weather Glass; and certeinly Expansion and Compression are not without Motion, becaus they Vary the Extension, and consequently the Locality of Bodys so Expanded or Compress. Nor are Motion and Rest Contrary Actively, but only Adverse Locaiy; for Rest is not Active, and therefore Motion cannot be Actively Contrary to Rest; as I have shewed: but Heat and Cold are both Active; and Actively Contrary. And if any can suppose that Heat is a Motion one way, and Cold another way, I desire them to assigne the different Local Motions of these, or any other Spiritual Qualitys, which they never yet have done, nor indeed can do, becaus they are no such Motions Naturaly. Certeinly Heat and Cold, which are most Contrary Qualitys, require answerably Contrary Motions; but as there is no such Contrariety between Rest and Motion, so neither is there in Motion itself, wherof there is only a Local Opposition, as I have said: for Motion is only one and the same Principle, from which no such Active Contrariety can Possibly proceed: though it may be an Indifferent Instrument of Contrary Agents, as of Heat, and Cold. Again, Heat and Cold may be Mist together into one Temperature, which we call *Tepor*, and that is both Hott and Cold, though Mist, and more Remiss thereby; wheras Opposite Motions can not be so Mist, for if Heat should be by Local Motion one way, and Cold by it another way (which though not Properly Contrary, yet must be Diametricaly Opposite and Adverse) then one such Motion must necessarily stay and stop the other, mutualy, whereby there should be no Motion at all, and consequently neither Heat nor Cold: and this *Tepor* is, as I have said, *per omnia*, and not only *per minima*, much less by any Imaginary Parallel, or Meridional Lines, or the like, which yet must Intersect, and thereby also the Moving Parts must stay and stop one another: and I suppose if

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Mathematical Philosophers would pleas to reconsyder Local Motion according to Mathematical Rules, they would easily discover the Vanity of any such *Hypotheses*. But as Heat doth thus Caus Motion by Rarefaction, Segregation, Corrosion, and Comminution, of some Parts, so consequently by Condensation, and Congregation of others; and so it is said to Segregate Heterogeneous, and Congregate Homogeneous Parts; becaus, when the whole Body is Rarefied and in Fusion, the Homogeneous Parts Naturaly Congregate themselvs, and the Heterogeneous are thereby Segregated. And so in making of Salt the Vapors go one way and fly Upward, and thereby the Salt goeth together another way, and Sinks Downward. Also thus though Heat doth Immediately Rarefy, it may Mediately Condensate; and as it doth Immediately Melt, so also Mediately Constipate; as by Rarefying the Water, and Melting it more into Vapor, it Condensates and Constipates the Salt, and more notably in Syrups, Tarr, and the like, which will be boiled into a Gumm, or Pitch, or into a Consistence beyond them. And so it may have many other such Collateral and Consequential Operations and Effects. But there is not only Heat Inherent in the Igneous Body; for plainly it heats at a very great distance, which must be by Heat Emanant, becaus all Operation is by Contact; for as there is no Vacuity between Entitys, so neither in Operations, between the Operator and Operated: and that there is such Emanation both of Heat and Light I shall plainly shew heerafter, and also now observ, that there is another wonderfull Property of Emanant Heat, which is Attraction, and this is indeed the chief End of the Emanation therof, by which it doth not only heat at a distance, but also draw other Bodys to it, whereby it may more neerly and more strongly Operate upon them by its Inherent Quality from which the Emanant floweth forth, as I shall also plainly shew heerafter concerning Electricity. And such an Attractive Heat is that which is called Vital, whereby Animals Nourish themselvs, Attracting their *Fomes*, or *Materia Nutritiva*, by this Heat, and then Firmenting, Concocting, Congregating, Segregating, and Exercising all the other Properties therof in order to their Nutrition. Also to this purpose there is a double Power, or rather several Degrees of Heat, wherof one is Calefactive, and more Moderate, and Temperate, which Generates, Nourishes and Fosters, as the *Tepor* of

the Spring, Incubation of Fowls, and the like; and the other Cauſtike, and more Intenſ and Torrid; which Corrupts, Deſtroys, and Burns, as in all *Incendia*. But certeinly Heat itſelf is Generated only by Production out of Potentiality into Actuality, as I have ſaid, either Univocaly by Fire alone; as when Wood burns in the Fire, and the like; or Equivocaly, which may be by many other Equivocal Cauſes, whereby the Potential Heat may be freed and delivered out of its *Chaos*, and Priſon of Potentiality. And ſo it is Generated by Motion, as by Colliſion of a Flint and Steel, or by rubbing of Firecanes, wherin one may ſmell the Fire before any ſuch Colliſion or rubbing, which was ready to break forth, and is freed by ſuch Commotion, and the Fiery Vapors or Corpuſcles thereby diſcharged; and ſo by Contrition, as Coachwheels will ſometimes be fired; and generaly all Terrene Bodies Rubbed do heat, becauſ, as Earth hath the greateſt and groſſeſt Miſtion with all the other Elements, ſo it hath commonly a notable Portion of Fire in it. And it plainly appears that the Motion is only Inſtrumental heerin, becauſ other things do thus alſo Equivocaly Generate Heat; as Water caſt upon Quick-lime, and Vapor in Thunder-clouds, Hay-ſtacks, and the like: and it likewiſe appears that they do only thus Equivocaly and Inſtrumentaly Generate or Produce it, becauſe the Flame therof afterward will be Extinguiſhed by Water, or blown out by Motion like any other Fire. Nor may we wonder much at the large quantity of Fiery Flame which is thus Produced out of a little Wood, or Gunpowder, or the like, when we conſyder the great Rarefaction of Water into Vapor, and the Vapor of Fume, which Incenſed is Flame, is yet more Rarefied; as may appear by the very quick and direct Aſcent therof, while it is in Flame, through the Ambient Air; wheras afterwards it Aſcends more ſlowly and in rowling Volumes, or *Cincinni* of Smoak. And indeed we hardly perceiv or can conceiv how ſuddenly the Individual Flame paſſeth away, and is Altered and Renovated. Certeinly *Ignes Fatui*, *Stellæ Cadentes*, and the like, Continue much longer in their Individualitys; which is through their more Temperate and Generative Heat, wheras the Fire of Flame is more Cauſtike and Corruptive, and both Generates and Corrupts ſo ſuddenly. But Fire in Iron Candent (which is not Iron and Fire Individualy ſeveral, nor Fire only in the Pores of the Iron, as hath been ſuppoſed any more then in Fume) for ſo

Glaſs

Glaſs which is Imporous will alſo be Candent; but, as I have ſaid, the Fire wherewith the Earth of the Iron is Miſt, and which was before in it Potentialy, being now Actuated, doth Appear and Operate in it; and becauſ it doth Emitt none or very little of the Fiery Vapor or Fume, therefore doth not Flame, or very little, and ſo reteineth the ſame Individual Fire Actualy in itſelf much longer; which may be ſo Actuated in it again, and again; becauſ the Fire therof is more fixed in the Miſtion, and leſs Volatile: wheras if a very ſtrong Coal, as of the beſt Oak, or Birch, or the like, be Incenſed and Inflamed very long in a Furnace, (which it will endure and yet come out Whole and Firm) though it may be made Candent again, yet it will not ſo kindle nor burn afterward, as it did before the Fiery Vapor therof was Emitted and Volatiliſed. And wheras ſome have Projected to make Fire Perpetual, I eſteem it Poſſible if the ſame Individual Fire could alway be continued in Actuality in the ſame Body, as in Iron, or Gold, or the like (as it is in the Sun, and Æthereal Bodys) but not Practicable (otherwiſe then as in our new Iron Harths, which do not only Reflect, but alſo add the Actual Heat of the Iron;) becauſ the other Elements, which are Predominant in the Miſtion therof, and Ambient about it, do always Oppugn it, and though, while it is in Act, it doth notably prevail againſt them all, yet at length they Overcome and Extinguiſh it by their Denſity, or Cold; and if Nature had not armed them all againſt it, there would be a preſent Conflagration of them. And ſo Perpetual Fire would make a Perpetual Motion, which is Poſſible, and not only Actual in Æther, but alſo in Water, and yet not found to be Practicable by Art. Alſo Fire is Corrupted by its own Vehemence; for by Rarefying the Body wherin it is, it Dilates and weakens itſelf; and lieth more open to the Air, which thereby hath greater Advantage, and Power over it, nor indeed can any of theſe Contrary Qualitys Exiſt in their utmoſt Intenſion and Extremity, which is contrary to the Common Law of Nature, and their own Particular Nature is to be Miſt in Contemperature, or at leaſt to Oppugn others; and if either that Miſtion, or Combat ceaſeth, their Activity alſo ceaſeth; and ſo they return into their Potentiality, as I have before ſhewed. But Fire as it is a Hott Spirit may be overcome with Cold, as Flame by the Ambient Air; and as it requireth a Rare Body, ſo it is Oppreſt or Choaked by more Denſ Bodys, as Water, which doth not Extinguiſh Fire by Cold,

(though it hath some Actual Cold in it) so much as by the Fluid Density therof, which Insinuateth into, and Invadeth all the Fiery Body; and so Water Actualy Heated will quench Fire as well as Actualy Cold; for that Actual Cold is very soon & easily overcome by the Fire: and Warm Water is somwhat more Rare Vaporous and Insinuative, and by the Actual Heat the Fiery Body is more opened unto it (as Univocal Spirits do generaly open their Bodys one unto another) whereby it doth as well or better prevail against it then Cold Water. Also warm Liquors Tinge or Dy better then Cold by their Insinuation, but Clammy, as Milk, and the like do most notably Suffocate Fire, yet if the Fire be not by such Insinuation Penetrated, but only covered with some Continuous Bodys it will not be Suffocated, because its own Body is the same, and not Altered thereby; and therefore Iron Candent in a Box continues hott almost as long as it would out of it, wheras Flame which is only a Fiery Vapor is soon putt out by an Extinguisher; which returns the Vapor upon itself, and so stifles the Flame: And if Coals of Fire be covered with some Ashes, the Fire in the Body so covered doth long continue, though the Flame Emitted be presently Extinguished thereby. And therefore it is to be observed, that as Fume is a Niggard, becaus it is not Incensed, so Flame which is so continualy Emitted, is a great Waster of Fuel, and of the Actual Heat therof, which still passeth way; and becaus it Ascends, doth less Diffuse the Heat, but is therefore fitter for Boiling; for it being a Fluid and Subtile Vapor, doth embrace other Bodys with the Inherent Heat therof, which is much stronger then Emanant Proportionably, and by such Insinuative Penetration it doth better Melt Brass, and such other Metalls, that are more Penetrable by it, and more easily Fusible in themselvs; wheras Iron is so Robust Contumacious and Consistent in itself, that it doth not yield much to Flame, but is to be Melted by the Contact of Inherent Fire of Charcoal, and the like. Again, if Fire can overcome its Enemy wholy, then it is more Augmented by the Potential Fire therof, which it Univocaly Generateth and Produceth also into the same Actuality with itself; as Water cast in a small Proportion upon a very Ardent Fire doth increas it, and Assist it (as Smiths commonly find by such Practice) and I suppose Fire may be made so Intens, as to burn and spend the very Fume and *Fuligo* of the Fuel. Also there is apparently an *Antiperistasis* between

tween ſuch Contrary Qualitys (though ſome pleaſ to deny it by a greater *Antiperiſtaſis* of Contradiction) which doth Excite them mutualy, but eſpecialy the Victor, which is commonly Fire; and this is the very Nature of their Contrariety, which, as I have ſaid, *Marcet ſine Adverſario*, and the Conqueror is both Continued in his Actuality, and Increaſed in his Activity, by the Combat. And that I may not ſeem to ſpeak Metaphoricaly; I ſhall plainly ſhew that there is Realy ſuch an Intentional Conflict in theſe Inferior Natures, though neither Senſitive, nor Intellective in themſelvs. For thus is this Combat between Heat and Cold Managed, as it were, in a formed Batell; wherin firſt they draw out their Forces to their Frontires, not only their Emanant, but alſo their Inherent Powers, and not Circumferentialy after their ordinary maner, but Purpoſely and Directly, to that Part, and toward that Point, where the greateſt Oppoſition is; and wheras otherwiſe their greateſt Power is generaly in their Center, where it may beſt Unite and Fortify itſelf, (for the ſame Politike Reaſon to Preſerv and Defend itſelf) it doth now Iſſue forth to the very Confines of its own Body, and there Encounter the Contrary Quality which would deſtroy it. As in a Boiling Pott the Bottom therof which is next to the Fire is moſt Cold, ſo as you may ſafely feel it with your Hand; and ſo it is obſerved that the Vital Heat is Internaly greater in Winter then in Summer: for Contrary Qualitys not Miſt but Actuated in ſeveral Subſtances do thus Reſiſt one another, as Homogeneous Qualitys do Evoke and open their Bodys one to another, and are more ready to Unite and Combine together. And where one Contrary Quality doth begin to prevail againſt the other, that Retireth back again to its Center where it is ſtrongeſt, as Heat to the Stomack. And ſo in Veſſe's of Beer frozen, and, as ſome ſay of Sack. But if one prevail ſo farr againſt the other as to Rout and Profligate it, then it flys away in Vapor, or ſuch Fugitive Corpuſcles fitt to retein it as in Flames, and Diſſolutions, and the like. Now wheras it is ſaid that the Motion of Fire is upward toward its own Element, though it be true that generaly it is ſo, yet I do not conceiv that to be the Reaſon therof, becauſ Local Motion Upward, or Downward, is Immediately of the Matter and Body, and not of the Spirit; and therefore Æther is Uppermoſt, Becauſ it hath a moſt Rare Body, and ſo Flame Aſcends Upward, becauſ it is Vapor Accenſed, which

by that Accenſion is alſo more Rarefied; and wheras that is Properly Culinary Fire (wherin anyother Element may be Predominant in the Miſtion therof) Vapor or Water Rarefied is the moſt fitt Body to retein it in its Actuality; for Air, though as Rare, yet hath a Proper Quality Contrary to Heat, that is Cold, as I ſhall ſhew heerafter; wheras the Moiſture of Vapor is Indifferent, as I have ſaid, and therefore it exhibiteth a moſt Lucid and Subtile Fire, and ſuch as is moſt like to Æthereal: but if the Fire be Actuated in a more Aqueous or Terrene Body it doth, and neceſſarily muſt, Deſcend; and *Aurum Fulminans* Incenſed flys every way, with the ſeverall Bodys more Rare, or more Denſ, that are Segregated and Diſpelled by the Exploſion.

III. The other Quality of Æther is Light; which as it is moſt Glorious in itſelf, and doth Actuate the Viſibility of all this Spectable World, ſo by the Spiritual Analogy therof, it doth not only diſcover the Nature of other Elementary Qualitys, but alſo of Vegetative and Senſitive Qualitys, and the very Subſtances of Spirits in ſome reſpects, Symbolicaly and Hieroglyphicaly; ſo as I can not conceiv a fitter repreſentation therof to Senſ then Emanant Light, which is more, as I have ſaid *in Statu Separato* then Inherent, and more Viſible then Magnetike Virtue: and though Light be not it ſelf a Subſtance, but an Accident, yet Accidents are Real Entitys aſwell as Subſtances, and have as Real Propertys, and Real Coextenſion; which may be, according to their Nature, Analogous to the like Propertys of Subſtances. And as Heat is the moſt Chymical Inſtrument in Nature, (and therefore ſome Chymiſts have ſtiled themſelvs Philoſophers by Fire) ſo Light is a moſt Philoſophical Inſtrument; and a more exact Study of Optike, Dioptrike, and Catoptrike (that is, of Phyſical rather then Mathematical) might render us Philoſophers by Light; wherefore as I recommend the more Curious and particular Inquiſition therof to others; ſo I ſhall now generaly and occaſionaly heerafter make ſome Philoſophical Obſervations therupon in my enſuing Diſcourſes. But though Light be ſuch a Conſpicuous and Conſyderable Quality, yet I do not therefore ſuppoſe it to be any Subſtance, much leſs a Body, or having any Corporeity in itſelf; and ſhall prove it to be no more a Corporeal Subſtance then Heat; and yet I do not remember that ever any hath affirmed Heat to be

be any such Substance, though Heat and Light be very Homogeneous and Analogous, and which is yet more strange, not Inherent Light, but only Emanant is thus esteemed Corporeal, though Inherent be farr more like to such a Substance then Emanant: but becaus Inherent is already in a Body, we look upon it and the Body in Gross, and so take them both together; wheras Emanant is Emitted out of the Body, and is not Inherent in any other Body, and therefore some suppose it to be a Bodily Substance in itself; becaus they do not distinguish between Substances, and Accidents, whose Difference nothing can more discover unto us then this Emanant Quality, which is so far Different from the Substance that it is even Localy Separated from it, though Originaly and Continualy Radicated and Subsisting in it. I have already shewed that the whole Work of the Six Days was no Creation of any new Elementary Entitys, either Substances, or Accidents, but only a Production of Substantial *Composita*, or of the Actualitys of Accidents out of their Potentialitys; and such, & none other, was this Production of Light in the First Day, as I have also more particularly shewed in my former Enumeration of all the Six Days Works: wheras the Substantial Æther was one of the Heavens expresly mentioned to have been Created in the Begining, and so the Air was another, and both were then totaly Dark, and afterward Illuminated by this Production of Light out of Darknes, as a Lamp is now Lighted by Successive Generation, or Production of Light, as an Accident out of the Potentiality therof into Actuality; which also declareth the Original Generation therof to have been none other; though Incension seem to be as like to a Creation, and Extinction to Annihilation, as any other Instances I know in Nature. Also the first Light was only Inherent in the Æther, or Emanant from that Part therof wherin it was Inherent into other parts of it, but not into the Air which was not yet Expanded or made Diaphanous and fitt to Transmitt it, still in the *Chaos* of itself as well as Water, and Earth, untill the Second Day: for if the Light, then also the Heat of Æther, should have been Emanant into it, and that should have been Transmitted to the Water, and so caused the Vapors to Ascend in the First Day; which plainly was not, untill the Second Day. Wherefore if this Light were a Substance in the Air and Water, and not only an Emanant Quality, flowing from the Inherent Light of Æther, then either God must have Created more parts

of

of that Luminous Substance in the Air and Water in the Second and Third Days, which is Falſ; or Produce it out of them as he did before out of Æther: and ſo we muſt affirm the Air and Water to be Inherently Luminous in themſelvs, which they are not; otherwiſe there ſhould be no Day and Night Artificial in them, as there is; or they muſt produce out of themſelves a new Subſtance, which was not in them before, that is, Create it, which is Impoſſible: wherefore it muſt neceſſarily be only ſuch an Emanant Quality of Æther, as I have declared of the Inherent Æthereal Light Produced in the Firſt Day, and then flowing into other Parts of the Æther, which was Prepared and Perfected in the Firſt Day, and afterward into the Air and Water in the Second and Third Day, when they were Prepared and Perfected, and thereby made Diaphanous and the Obſtruction of their Informity and Inanity removed. And the very maner and way of Emanation, being a Tranſition Localy from the Inherent Quality, which is Localy in the Subſtance, into the Diaphanous Body, which is Localy Diſtant from it, doth plainly prove it to be an Accident, or Accidental Quality both Realy and Localy Different from the Inherent Light, and alſo from the Lucid Subſtance; becauſ it is Originaly and Continualy Radicated in the Inherent Light Immediately, and Mediately in the Lucid Subſtance, wherin it doth Subſiſt and not in the Diaphanous Body, into which it is Emanant; nor is it any Part therof, nor Miſt, or in any kind Congenerous with it, which doth plainly ſhew Emanant Light, and all other ſuch Emanant things not only to be Accidents, and of an Inferior and Different Nature from Subſtances, but alſo from Inherent Qualitys; for though Emanant Qualitys do Spiritualy according to their Spiritual Nature Subſiſt in their Lucid Subſtance by the Mediation of their Inherent Qualitys, yet Coextenſively and Localy they Exiſt in the Diaphanous Body; wherin they do not ſo Subſiſt, as in the Lucid Body, neither do they ſo ſubſiſt in themſelvs, but are Inſtantly Removed with the Lucid Body; wherefore they are neither Subſtances in themſelvs, nor Miſt with the Diaphanous Body wherin they Localy are, but do not Spiritualy Subſiſt. And conformable heerunto are all the *Phænomena* and Senſible Experiments of Emanant Light, for ſo it is Moved and Altered in the very Locality therof according to any Local Alteration of the Inherent Light, and Lucid Subſtance, and not according to any Local

Local Alteration of the Diaphanous Body; though it be Localy in it, as an *Ubi*, only Definitively, that is, where it is, and in so much therof as it is, and not elsewhere, nor in any more Place then it is; but not Circumscriptively, and much less Subsistentialy, as it is in the Lucid Body, to which nothing doth Unite it, but such a Spiritual Subsistence therin. And this Locality therof in another Body Coextensively doth Sensibly represent the Coextension of Spirits in Matter. And as it is never Actualy in the Inherent Quality of Light or Substance of the Lucid Body, becaus it is Emanant out of them both, so it is never Potentialy in the Diaphanous Body, as it is such, becaus as such it is only Diaphanous or fitt to Receiv it into itself, as Matter doth Spirits; (which it may also represent unto us.) And itself is sometimes Actualy, and sometimes Potentialy, Produced and Reduced by a most Momentaneous Generation, for if the Lucid Body be in a Diaphanous Body, the Emanant Light will be as Actual as the Inherent; and if it be Obnubilated with an Opacous Body, it is in the same Moment Reduced to Potentiality, which also sensibly discovereth Actuality and Potentiality. And so in a Moment it passeth from Heaven to Earth, though I do not affirm, or conceiv, that Motion to be Instantaneous which is through so vast a Space, (wheras no Motion can be through any Space or Extension, which hath Part beyond Part, though it be never so little, Properly in an Instant; becaus it is from one Part or Term to another; as I have said) yet it is so Momentaneous, that to us it is as it were Instantaneous, so as no Mathematical Science, or Human Wit whatsoever, can perceiv, and assigne any Difference: and yet we must acknowledg that it is vastly Different in itself, which is also another very wonderfull Contemplation, if it be Curiously consydered, and may well be Repolited among the other Mathematical Mysterys which I have formerly mentioned. Certeinly there is not, nor Possibly can be, any Physical Discrimination or Dissection therof, as of a Body or Bodily Substance; for it is Impossible by any other the quickest Motion in Nature of any Opacous Body Interposed to cutt off any Part of a Ray, or to prevent the Reflection therof; which also Sensibly proves it not only to be no Corporeal Substance, but of another Nature farr Different from it, and also Different from Inherent Light, for it doth not thereby Return or Recoil into it, but Reflect itself, and continue still in its Actual Emanation, though in another way, to preserv it-

ſelf in its own Different Actuality, as every thing Naturaly doth; and this alſo ſhews the Specifical Oeconomy of ſuch Different Natures: and that Accidents can not be Annihilated more then Subſtances, or Matter itſelf: (and conſequently not Created) and therefore a Ray of Light can not Poſſibly be Diſſected, for then it neither Subſiſting Actualy, nor Potentialy, in the Diaphanous Body, wherin it doth Localy Exiſt; but in the Inherent Light and Lucid Subſtance, as I have ſaid, if it could be Diſſected and cutt off from them, it could neither Subſiſt in itſelf, nor in the Diaphanous or Lucid Body, nor in any other, Actualy nor Potentialy, nor in any maner whatſoever, and ſo ſhould not only Vaniſh or Diſappear to us, but totally Periſh, and not be any thing, either Actualy, or Potentialy, or in any maner whatſoever, and conſequently be Annihilated: whereas if the Inherent Light be Obnubilated it returns into it, and into its Potentiality therin, out of which it will as ſuddenly proceed and flow forth again into Actuality, when the Obſtruction is removed: or if the Inherent Light be Extinct, it alſo is Reduced thereby into its Potentiality, as well as Emanant Light, and ſo both into their Potentialitys in the Subſtantial Spirit, wherin their Accidental Eſſences do Originaly Subſiſt; nor doth either Inherent or Emanant Light add any Material Denſity or Gravity to the Lucid Body, for no Spiritual Qualitys though never ſo much Conſpiſſated Spiritualy (and though as I have ſaid ſuch Spiritual Conſpiſſation be Analogous to Material Condenſation) do add any Gravity to the Body; as an Iron Candent which is very Fervid and Lucid, yet is not Heavier then when it is Cold; nor is the Air, unles it be alſo Condenſated in the very Body therof, more Grave by Night then by Day, or in Summer then in Winter: and therefore Planets do not fall through Æther, though they have more Inherent Heat and Light: Much leſs is any Body Heavier when it hath more Heat and Light Emanant in it: and the ſame may be Curiouſly tried by any Opacous Body poiſed in Water, which will not riſe by any ſudden admiſſion of the greateſt or moſt Spiſs Light into the Water, though it will afterward Sink by Heat, which is not becauſe the Heat doth Levitate, or Light Gravitate, the Water, by Impregnating it with any more Rare, or Denſ, Matter in themſelvs; but Heat doth Spiritualy Rarefy the Water itſelf, and ſo conſequentialy Levitate it, wheras Light doth neither Levitate,

nor

not Gravitate it: and yet if it were Matter Impregnating the Water, or Penetrating the ſuppoſed Pores of any Diaphanous Body, it ſhould thereby Gravitate; but indeed there is no ſuch Penetration of Pores by Emanant Light; which certainly is not a Body, becauſ though it be not Miſt with it, yet it Penetrateth the very Diaphanous Body itſelf *per omnia Puncta*, for turn an Equaly Diaphanous Globule againſt the Light which way you pleaſ, it will be Equaly as Diaphanous one way as another; which could not be if the Rays did paſs only through Pores, as ſome ſuppoſe; unles we ſhould alſo ſuppoſe it to be all Pores, and conſequently no ſuch Globulous Body. Alſo this is moſt apparently contrary to all the Laws of Refraction, which are always in Direct Lines from one Point to another within the Diaphanous Body itſelf, and by moſt Regular Inflections, as I ſhall ſhew heerafter, and not through any ſuch Porous *Meanders* and Diverticles: and indeed Diaphanous Bodys, as Æther itſelf, through which the Sun doth Eradiate, are of all others leaſt Porous; and if the Light did only Penetrate through ſome more Rare Matter in theſe Pores, then that being therefore Diaphanous, it muſt Penetrate through the very Bodily Matter therof, which no Body can do, or through other Pores of that Porous Matter, and ſo Infinitely, as I have ſhewed, or through Interſperſed Vacuitys, which is as Impoſſible as the other; and if it were Poſſible, yet it ſhould be no Diaphaneity, but only a plain Phaneity; as when we look through a Sive, or Silk, we do not therefore ſay that the Sive or Silk is Diaphanous, as the Air; and the Air could not be ſo Totaly Diaphanous as it is, unles it were a Diaphanous Body throughout in the whole, and not only in the Pores therof. And as ſeveral Specifical Qualitys may be in the ſame Place *per omnia*, as Heat, and Light, ſo alſo ſeveral Individual Lights Emanant, which muſt neceſſarily Differ Individualy; becauſ they Subſiſt in ſeveral Lights Inherent, to which they belong, and to their ſeveral Lucid Bodys, and which doth alſo appear by the ſeveral Shadows that they caſt, which being ſeveral Privatives, do evidently prove the Poſitives to be ſeveral. So if the fower Walls of a Room be painted with fower ſeveral Colors, Black, White, Blew, and Yellow, though the Rays of Light Reflected from them Penetrate one another *per omnia*, becauſ they fill the whole Room, whereby the ſeveral Colors may be ſeen in every Point therof, yet we ſee them ſeveral and Diſtinct, and not

Mist or Confounded. By all which it plainly appears that Local Union *per omnia* is no Perfect Generative Mistion, and much less Aggregation. Also when Rays Intersect one another in the same Point, and are Decussated and Inverted, yet being afterward Reflected, whereby they become Objective to the Sight, they represent their several Colors Inverted. But if they be Colorate themselvs, being Tinged by passing through several Painted Glasses, and be so Reflected Objectively in their Local Union, they represent a Mist Color, as I have formerly shewed; though that be only a Local, and no Perfect Union; becaus they are still several Individuals belonging to their Individualy several Inherent Qualitys, and Substances; and therefore are not United into one Proper or Perfect *Compositum*, but only become Objectively such to the Sight; and when the Rays of Light are Incolorous themselvs, becaus they are not Objective, but Vehicular, as in the whole Room, though they be then also Localy United, yet they do not represent any Mist Color, but their several Colors, otherwise we could not see them Distinctly: and the Image therof will never be so Confounded in the *Focus* by such their Intersection, but that being Reflected they still appear several. And thus as Light, and other Spiritual Qualitys, so also several Spirits or Spiritual Substances may be together in the same Place, and Penetrate one another *per omnia*, as well as they do the Matter in Consubstantiation; becaus, as I have said, they are only in such an *Ubi* Definitively, which is Common to them all, and not Proper to any of them, as Circumscriptive Extension is to the Matter; but therefore several Bodys Unmist, and of several Extensions can not Possibly be in the same Place; which, as I have before observed, is one of the grand Differences between Bodys and their Extension, and Spirits and their Spiritual Qualitys, and the Coextension therof, and doth plainly prove Emanant Light to be such a Spiritual Quality; becaus apparently Several Lights are in the same *Ubi*, wheras Bodys can not so be therin. And so also the Motion therof is not only Different, but Adverse to that of the Matter, which is from the Circumference to the Center, wheras this is most evidently from the Center to the Circumference, otherwise it should not be Emanant. And now I shall farther discours of the Emanation, Transition, and Retreat of Light, which are all such Spiritual Motions, as shall plainly discover them to be farr Different from the

Motions

Motions of Matter, or any Affections therof, and alſo moſt wonderfull in their own Spiritual Nature. And firſt, the Emanation therof is very Conſyderable and Admirable, as I have before deſcribed it, Subſiſting in one Subſtance, and Exiſting in another, and heerin more Admirable then the very Inherent Light, which doth Immediately Subſiſt in the ſame Subſtantial Spirit therof, and doth Exiſt alway Localy with it in the ſame Body: but becauſ theſe moſt Active and Energetical Qualitys of the firſt and moſt excellent Element, Heat, and Light, are thus Originaly Inherent and Confined to the Body of their Subſtantial Spirit, and no Operation can be at any Diſtance, but only by Immediate Contact of Subſtances, or Qualitys; therefore they are Armed and Inſtructed with theſe Emiſſarys, which they ſend forth through all their Sphere of Activity, which perhaps may be as large as the whole Elementary Globe, but as the Inherent Qualitys are ſtrongeſt in their own Center, wherin they are moſt United; ſo they are the Centers of Emanant, from which they proceed, and wherunto they return again; and theſe Emanant Qualitys are Proportionably Stronger, or Weaker, as they are neerer, or farther from the Inherent Qualitys: but in the very Confines between them both, and from which they are firſt Emanant, they are much Weaker, then Inherent, which Subſiſt Immediately in the Spirit, and theſe in them. As ſuppoſe an Iron Candent Equilateraly Triangular, wherof the Center is Exactly that Point which is alſo the Center of a Circle Circumſcribed about ſuch a Triangle, in a third part of the Perpendicular Line, above the *Baſis*; yet if you touch the Candent Iron at any Angle it ſhall Burn more, then if you place your Finger in any midle Point of the Circle, ſo Circumſcribed between the Angles; though all the Points of a Circle be Equidiſtant from the Center, becauſ at the Angles you feel the Inherent Quality of the Candent Iron itſelf, and in the other Points only the Emanant Quality therof. Alſo I muſt obſerv that though we call theſe Emanations, Eradiations, and ſo deſcribe them by Rays or *Radii*, or as the Poets ſtile them *Spicula*, or *Crines*, as ſo many ſeveral Darts, or as the Spokes of a Wheel, or Hairs of an Head, Diſcontinued between themſelvs more and more as they proceed farther from the Nave, or Skull, though Originaly Continued in the Root of them all, that is, in the Inherent Quality (and ſo I ſhall make uſe of this Common Term) yet Properly there are

no such several Rays therof, nor are they at all Discontinued; but fill their whole Sphere Continuously and Completely in every Part and Point therof, and we only Metaphoricaly fansy and describe them by such an Eradiation, as we Mathematicaly in a Continuous Extension Imagin Lines passing from one and the same Center to every Point of the Circumference, which are Indefinite and Innumerable, and therefore it can not Realy be so in Nature, unles an Unit and Number almost Innumerable should be Equal, which is Contradictory, as I have shewed. But as they are only Extension, so the true Emanation is not any such Eradiation, but one Continuous Flux from the Inherent Quality through the whole Sphere unto the Circumference therof. And I suppose it to be a Perfect Sphere alway, though not Equaly, Lucid, and that it is not any Spheroid, although the Lucid Body may be of any other Figure, as the Triangular Iron Candent, and the like; and so it seemeth that the *Halo* of a Candle in a Mist or Foggy Vapor is Orbicular, though the Flame be Pyramidal; which therefore Painters so represent; as also the *Halo* about the Head of a *Divus*. But this *Halo* about a Candle, and Barr about the Moon, and the like, are as it were midle Spheres between the Inherent Light and Utmost Sphere of the Emanant Light, Caused by the Obstruction and Partial Repercussion from the Mists and Foggs about the Luminary, whereby the Rays are partly Reflected which make the *Halo*, and Partly Transmitted (at in a Comet) which make the Utmost Sphere of the Activity therof. Yet these Imaginary *Radii* of Emanant Light are as Direct Lines, as the Imaginary Lines of a Mathematical Circle from the Center to the Circumference: and if they be Interrupted or Offended by any other Body Refracting or Reflecting them, as often as they are so Interrupted or Offended, they are Inflected and also pass from any such point of Inflection to another in Direct Lines. And that which so Interrupteth and Offendeth their Emanation is somthing Contrary therunto, as Cold is Contrary to Heat: and that can be no Privative, as Darknes which Light alway overcomes; for such Contrariety is between Positives; nor any thing which is not Active in itself, as Density, or any other Affection of the Matter, which as they are not thus Actively Contrary to Heat, so neither to Light, or to any other Spiritual Qualitys whatsoever, though according to the Universal Polity and Consociation of Nature,

ture, they may be more or leſs Symbolical, or Aſymbolical. And particularly Denſity is thus a Symbolical Affection of the Matter with that which is Contrary to Light, as Rarity is with it, and other Qualitys of Æther; which, as I have ſaid, requireth a very Rare Body: and ſo Denſity is a Corporeal Affection Requiſite and Analogous to the one, and Rarity to the other: but as there may be leſs Inherent Light in a more Rare Body then in a more Denſ; as in the Flame of Spirit of Wine, then of Pitch, which certeinly is a more Denſ and Fuliginous Fume, then the other; ſo more of Emanant Light in a more Denſ Body; as Glaſs is more Diaphanous then thick Water through which it will ſink, and yet is more Opacous. Wherefore there is ſomthing beſides Denſity that is Contrary to Light, which hath been well obſerved by others, and acquired a Name whereby it may be known, and is called Opacity, which is a Quality of Earth; as I ſhall ſhew heeraſter. And this is one of the other Qualitys of the Elements, beſides thoſe commonly called the Fower Firſt Qualitys, which are to be Conſydered and Regarded by Philoſophers, as well as them; and as we may not Invent any new fictitious Qualitys, which God hath not Created, ſo neither may we loſe any of them which he hath made to be in Nature, nor Confound any Simple Qualitys with Compound, nor Compound with Simple, which God Created in the Begining before there was any ſuch Compoſition: and though indeed *Entia non ſunt multiplicanda ſine Neceſſitate*, yet whatſoever God hath Created Neceſſarily is, becauſ he hath Created it, and therefore it is; and whatſoever is, is Neceſſarily while it is, and none can Annihilate the Entity therof, by any Finite Power of Nature, and much leſs by Opinion and Fanſy. For at it is ſaid of the Divine Word, ſo we muſt alſo Conſyder and Diſcourſ of the World as it is; and none can Add to it, or Diminiſh from it. And God in his Infinite Wiſedom did ſo Create the Heavens and the Earth in the Begining with all their Various Furniture of ſeveral Simple Eſſences, becauſ as it is his Infinite Perfection to be One in Himſelf, ſo it is alſo the Perfection of Finite Nature to be Many in One, whereby all the Various Perfections therof are Variouſly Expreſſed, which could not be only by One. Wherefore I ſhall ſett the ſame Bound to my ſelf, which God himſelf hath ſete in Nature, neither to go beyond the Begining of the World, nor any thing which he Created therin, nor to fall ſhort therof, or

fear

fear to affirm these Original Entitys to be such, becaus God who is the First Caus hath so Created them, without seeking any farther Caus or Reason therof; or to deny any Natural Mistions or Compositions to be any such Simple Principles or Original Essences though he hath also joined them together, with others, so that we can not sett them asunder Localy by any Chymical Separation. And such an Original Quality I find expresly Light to have been, Produced into Actuality in the First Day, which lay hid before in the Dark *Chaos* of Potentiality; and by the same Reason I know that Opacity was also Produced together with Light, and Mist with it in the Mistion of Æther, with Earth, as well as with the other Elements: becaus there is neither *Pura Lux*, nor *Puræ Tenebræ* Actualy in Nature, neither can I conceiv that any such Actual Qualitys can Exist Naturaly in their greatest Intension and Extremity; and therefore probably might not so Actualy Exist in the *Chaos*, before their Mistion, and Contemperation, which seems to be as Necessary to their Existence, as the present Mistions of the fower Elements, according to the first Works of God in the Six Days, and Original Institution and Law of Generation, and so must continue as long as any Successive Generation and Corruption, and present Cours of Nature. And this Opacity is a Terrene Quality, wherunto the Density therof is Assistant; and so Earth itself is most Opacous, and Water less, yet having some Opacity that causeth Refraction, which is a Partial Reflection; and so Air, and Æther, and all Diaphanous Bodys; for there is no Pure Diaphaneity without any Opacity. And this Opacity doth not only Reflect, and Refract; but is also Mist with Light in Colors, and in Light itself, which hath some Desultory Color, and is not simply Visible of itself, as I shall shew heerafter: Thus the more fixed Qualitys of Earth do fix the more Agile and Volatile Qualitys of the rest of the Elements, being as an Alloy to Metall which makes it more Malleable. And so particularly is Terrene Opacity to Æthereal Light; for as Owls can not see by Daylight, so the strongest Sight could not see the Pure Light, nor can it Exist in its own Simple Vehemence without the Misture of Opacity. And these Elementary Mistions are the Natural Perfections of the Simple Substances, and Accidents; which do therefore require it, as well as Matter and Material Spirits do Consubstantiation, as I have shewed. Now Diaphaneity being only a less Degree of Opacity as Rarity

Rarity is of Denſity, it is alſo Partly Opacous, and therefore, as I have ſaid, doth Refract, which is a Partial Reflection, or rather Inflection of the Rays from their own Natural Direction; and there is no Diaphanous Body which doth not Refract more or leſs, and none that doth Refract, but doth alſo Reflect. But in all Refraction and Reflection the Perpendicular Rays paſs through the Diaphanous Body Perpendicularly, and all Emanations Immediately are Perpendicular, and neither *A Perpendiculo*, nor *Ad Perpendiculum*, as in Refraction, or Reflection; which, as we commonly Intend by thoſe Terms, are always Oblique Lines. Wherefore I ſuppoſe that the Rays of any Lucid Body are not ſo Refracted in the Immediate *Medium* wherin it is, as of the Sun in the Æther, or of the Flame of a Candle in the Air; for, as I have ſaid, the Flux or Eradiation of the Rays therof iſſues forth Immediately from the Inherent Light in moſt direct Rays, and ſo they muſt Circumferentialy every way Penetrate their Immediate *Medium* with all their Rays Directly, and not Obliquely, as well as the Perpendicular Ray doth any Diaphanous Body which doth Refract the reſt. But we muſt alſo obſerv, that as Opacity doth cauſ Refraction and Reflexion of the Rays, ſo the Denſity of Diaphanous Bodys doth Ampliate or Diſtend the Rays of Expanſion, whereby it alſo weakens them: So I conceiv that Refraction and Reflection are, when the Rays having paſſed their Immediate *Medium*, do meet with another *Medium* of a Diaphanous Body being of Unequal Opacity, as Air is in Reſpect of Æther, and Water of Air, and the like; and as often as the *Medium* is ſo Varied, there may be ſo many Inflections of the Rays from every Point of the Variation therof, as I have ſaid; and according to that Unequal Opacity ſo is the Refraction, or Reflection, greater, or leſs. And which is moſt wonderfull, and truly Spiritual, the Inherent Light is not leſs Lucid in itſelf by all the Rays which it doth Emitt; becauſ, as I have ſaid, they are Different Entitys in themſelvs, and when they are Emitted Actualy, are only Produced out of their Potentiality in the Inherent Light, wherin they ſubſiſt, and from which they flow forth into their Actuality: nor is it more Lucid when they return into it again; becauſ they only return from their own Actuality into their own Potentiality. And thus the Inherent Light, having ſuch a *Potentia* of Producing the Emanant Rays therof, like an Inexhauſtible Fountain, doth not only

ſend them forth to Complete the Sphere of the Activity therof, but if they be Refracted, or Reflected, or do Converge, or Diverge, or however they be Diſordered, yet ſtill fills the Sphere, as before, ſo farr as it is not hindered by any Interpoſing Opacity. Alſo even theſe Emanant Rays have other Secondary Rays Inherent in them, and which they do likewiſe Emitt to fill the Sphere, as well, and as farr as they can, where themſelvs can not approach; as the *Crepuſcula* are ſuch Secondary Rays of the Principal Solar Rays, when they Decline by the Suns ſetting and ſinking beneath the *Horizon*; and ſo Rays that paſs into the *Foramen* of a Dark Room make it more Luminous by their Secondary Rays then otherwiſe it would be, and without which the Principal Rays themſelvs could not be ſeen, though the Secondary are much weaker, and leſs Lucid; whereby the others, which are notably more Lucid, are ſeen Objectively. But as I have ſaid the Emanant Rays are never Actual in the Lucid Body, becauſ they are always Emanant in their Actuality, and all the Light in the Lucid Body is Inherent; nor is it Properly any Actual *Niſus* of the Emanant Rays in the Lucid Body to Produce themſelvs, but of the Inherent Light to Produce and bring them forth, as the Lucid Subſtance doth the Inherent Light: and therefore Emanant Rays never Interſect, or Penetrate, the Lucid Body in their Emanations, Refractions, or Reflections; becauſ they never Actualy Exiſt in it, for then they ſhould be Inherent. And now I ſhall diſcover a farther Myſtery of Light Emanant; whereby I ſhall ſhew not only how the Motion therof is farr Different from the Motion of Matter, but how it is a Political and Intentional Motion, as I may ſo term it, Effectively, for the Preſervation and Orderly Poſition of itſelf. Thus Emanant Rays firſt paſs into their Immediate *Medium* in Direct Lines or Rays Circumferentialy, as I have ſaid; and where they are firſt Interrupted in that Courſ, and thereby Offended, all the Collateral Rays, ſo farr as they may, without Interſecting their own Lucid Body (which would Reduce them into Potentiality in the Inherent Light) do Incline on either ſide to Aſſiſt that Perpendicular Ray that is firſt Interrupted: As if the *Superficies* of any Opacous *Speculum* be Convex, the firſt Ray that is Interrupted thereby is that which is moſt Directly Oppoſite to the *Umbo*, or Summit therof; becauſ that is the neereſt Point of the *Speculum* to the Oppoſite Lucid Body, and the Collateral

Rays

Rays on both ſides do therefore Incline thitherward as farr as they may to Aſſiſt it; which is the very Reaſon why the Image Reflected from ſuch a *Speculum* appears Proportionably leſs, becauſ the Rays by ſuch Inclination do Converge more together; and if many ſuch *Specula* be placed together in one Table, as Baby Glaſſes, and the like, there will be as many Images of the ſame Face; becauſ, as I have ſaid, the Inherent Light doth always Emitt Emanant Rays, enough to fill the Sphere, whether they Converge, or Diverge, or however they be Diſturbed or Diſordered in their Emanation; and accordingly every one of theſe Images will be Proportionably leſs, if the Convexity of the *Specula* be the ſame, or greater, as they are more, or leſs Convex. And the farther the Face is drawn back from any ſuch *Speculum*, or the *Speculum* from it, the leſs Proportionably will the Image appear, according to the Mathematical Proportion of ſuch a Pyramidal Figure, wherof the Face is the *Baſis*, and the *Speculum* the Cone: for though the violent Motions of Refraction or Reflection do much vary from Mathematical Rules and the common Motion of Matter, yet the Natural Motion of Emanation from the Lucid Body into the Immediate *Medium*, and after Refraction, or Reflection from Point to Point, is Exactly Mathematical, and the Foundation of Catoptrike, as the other is of Dioptrike. But though the Object and Convex *Speculum* be never ſo farr Diſtanced, yet the Image will never be Contracted into a Point, (whereby it ſhould become no Image) becauſ the Perpendicular Ray which is Midſt, and hath alſo ſome Latitude, will alway keep the Collateral Rays aſunder; ſo that though they Interſect, and Invert themſelvs, yet the Perpendicular Ray will alway be Midſt: for that is never Refracted, but only Diſtended. And if the *Speculum* be Concave, then becauſ the firſt Rays which are Interrupted, are they which are next to the *Limbus*, or Brim, therof; therefore the Collateral Rays every way Incline to Aſſiſt them both without, and within it: and ſo being Reflected back again from the *Limbus* into the Concavity of the *Fundus*, or Bottom, make the Image to be Inverted. And in a *Foramen*, which is as a Concave *Speculum* without any *Fundus* or Bottom beyond it, therefore the Rays not being Reflected from the Sides, but only from the *Limbus*, paſs forward toward their own *Focus*, where they Interſect, and are alſo Inverted by ſuch Decuſſation therof, and the farther the Object

is drawn back from the *Foramen*, or the *Foramen* from it, the *Focus* is neerer to the *Foramen*, and the Image is leſs, then when the *Focus* is farther, and the Object and *Foramen* neerer. But it is alway leaſt next to the *Focus*, whereſoever that is. And ſo alſo through a *Lens*, or any open Convex Glaſs. Now this Motion thus Interrupted and Diſturbed is not Mathematical, but very diverſ from it: for if the Baſe of any Pyramid or *Iſoſceles* made of Wires Inſerted in a *Foramen* be Inlarged by any farther Production therof according to the ſame Figure, yet the Cone will be where it was before, becauſ the Pyramid or *Iſoſceles* is only Produced from the ſame Point Contracted; whereas if the Baſe of the Object be either way Inlarged, the Cone or *Focus* ſhall ſtill be neerer and neerer to the *Foramen*; and yet the *Foramen* is ſtill the ſame, and filled with Rays, whether the Baſe of the Object be farther, or neerer, greater, or leſs; but when it is farther there are more Rays of the Object Inlarged Proportionably, which Converge more toward the *Limbus* of the *Foramen*, and they being more Inflected thereby Interſect ſooner, and neerer to it Proportionably according to the Longinquity, and Lergth of the Rays; as if the Wires were ſo Decuſſated through the *Foramen*, and then were Diſtended and farther Separated at their other Ends without the *Foramen*, the more they are Diſtended the ſooner they Converge and Interſect within it: Alſo where there is ſuch Interruption of Bodys in their Motion; yet their Inflection is not like that of Emanant Rays; nor is it Refracted the ſame way but farr otherwiſe; as if a Bullet be ſhott Obliquely into Water, which doth Divert the Motion therof, it doth Inflect Outwardly *A Perpendiculo*, more, or leſs, according to the forcible Penetration therof, but never Inwardly or within the ſame Oblique Line Produced; wheras ſuch Refraction is alway Inwardly *Ad Perpendiculum*, more, or leſs, as the Diaphanous Body doth Refract more, or leſs; which are Oppoſite Motions, and Ocularly Declare not only a Difference, but alſo an Oppoſition, between theſe two Motions, and ſhew the Different Natures of Matter, and Spirits, and of all Material, and Spiritual Accidents and Affections; and there are plainly as Different Reaſons therof: for the Bullet itſelf is a Body, which tending to the Center is Diverted by the Water, that is another Body of Matter below it, which it cannot Penetrate, and will not be ſo ſuddenly Removed, as I have ſhewed; but doth therefore Inflect it in the Water

Pro-

Proportionably, as it would make it to Graze or Reflect in the Air, which is more Rare: wheras Emanant Light being no Body, but a Spiritual and Active Quality, whose Motion is Circumferentialy from the Center, and which can Penetrate, and is not hindred by a Diaphanous Body, as it is a Body, but only as it is partly Opacous, (which is another Spiritual Quality Actively Contrary to it) doth not only pass through it, as it is Diaphanous, but as farr as it can doth also Decline from its own Motion to Assist any other Rays interrupted by it, (as in the former Examples) toward which accordingly the rest do Converge and Incline as farr as they may: and thus Spiritual Qualitys can Vary their Motion (which otherwise also is Mathematical) either to Encounter a Contrary Quality, or to Assist one another: and this is from the same Political Principle in Nature of Preserving itself both in its Universal Entity, and in its Specifical Homogeneity, and also in its Individuality; whereby it plainly appears that there is such an Universal Nature, and also such Specifical, and Individual Natures, becaus there are such Real Unions and Confederacys, and such Real Effects therof. And thus Emanant Rays are Refracted in Diaphanous, or Reflected by Opacous Bodys; and do Converge, both in Convex, and Concave, *Superficies*, toward the *Umbo* or toward the *Limbus*: and though the Image in one be Erected, and in the other Inverted, yet in both it is Proportionably less; which doth plainly shew the Convergence of the Rays, in the Image: and if the *Superficies* be Lenticular, and not so Orbicular, whereby it is as it were Semiconvex and Semiconcave (as one Bank is also half of the Vally) there may be a double Image Reflected, wherof one shall be Erect, and the other Inverst: yet they shall both be Proportionably less, as before: And if the *Speculum* be Plane, it Reflects almost Equaly, unles the Lucid Body be Orbicular; as a full Moon, which in a Looking Glass appears somwhat less; becaus the lowest Ray of her Lucid Orb is somwhat neerer to the *Speculum* then the rest, and therefore first Interrupted. And when the Rays have Penetrated the Diaphanous Body, though they are Refracted according to their Points of Incidence, and Inflection, and are so Directed thereby, yet they pass through it in Direct Lines, as I have said, from Point to Point, untill they meet with somthing of Different Diaphaneity therin, which as another *Medium* will again Inflect them, and so when they go forth by the other Opposite *Superficies* Convex, Concave, or

Plane, into another *Medium*, they have another Point of Excidence, as I may so call it, and another Inflection thereby more, or less, as that other *Superficies* is Figured, or the *Medium* is more, or less, Diaphanous: and so they Incline to the Rays first Interrupted, or last Ingaged either in the lower *Umbo* of a Convex, or *Limbus* of a Concave, or Indifferently of a Plane. But if they afterward Intersect, yet the *Focus* will never be a Point; becaus, as I said before of an Image, the Perpendicular Ray doth alway caus some Latitude therof. And this I conceiv to be the Cours of Emanation of Rays of Light, which Naturaly is Circumferential, and when it is Interrupted, doth thus Converge as farr as it may, though it be also said to Diverge as in the Concave *Speculum*, becaus the Rays which so Converge to assist the Interrupted Rays one way, do indeed Diverge from others the other way; and the whole *Limbus* so Interrupting them they so Converge to every Point therof. And now as I have shewed the Motion of Emanant Light to be very Different from Corporeal Motion of Matter, so I shall also shew that any Light is not only Motion, or Puls of the *Diaphanum*, or somthing of that kind, which others have affirmed it to be, whereby I suppose they Intend also a Corporeal Motion, which I have already disproved; but yet as I have particularly discours'd of the Motion of Heat, so I shall now also of Light; and certeinly if Heat be a Motion, and Light also a Motion, they may not be one and the same Motion; for then Heat should be Light, and Light Heat; and so we should not need to argue any farther particularly concerning Light, having argued it already against Heat: but I do acknowledg them to be several and Different Qualitys of Æther, and desire such who affirm them to be Motions to assigne their several and Different Local Motions, which if they be several and Different, must Impede and Obstruct one another, as I have said; for Heat and Light are Localy United *per omnia*, and therefore their Local Motions must be also *per omnia*, as a Sunbeam or Flame are very Lucid, and very Hott *per omnia*. And now let any such satisfie themselvs how the same Body, in the same Place, and the same Time, can Possibly Move by several Motions *per omnia Puncta*. Again, if the Motion of Light consydered distinctly by itself be only a Corporeal Puls, then it must be so Impelled by some other Corporeal Mover, and then they must also assigne some particular Motions and Impressions of the Body Moving,

ving, whereby it doth so Impell the Body Moved, as to Generate Light; otherwise any Body that Moves the *Diaphanum* in any maner might, as well as the Sun, thereby Generate Light; and Collision of Icicles should Generate it and Heat, as well as of Flint and Steel. Also let them shew what Connatural Analogy there is between these two very Different Motions of Circulation, and Collision, which yet do both Generate Light. But I suppose I may fully satisfy them with one Consyderation, which is, that the Motion of Emanant Light is so Swift and Momentaneous, that there is no Corporeal Mover in Nature which may Move the *Diaphanum* so swiftly, certeinly the Motion of the Sun is Comparatively, as Rest and Sloth in respect therof, and therefore can not Generate Light by his Impulses; becaus the Pulses Caused thereby can not be Swifter then the first Impressions. And though it be true that any Consistent Body, though never so long being Moved in any Part or Point, is Moved in the Whole, almost Instantaneously and Simultaneously, becaus it is Consistent; yet Air, which is the great *Diaphanum* and Vehicle of Light, is not Consistent, but Fluid; and so is Æther; as I have before shewed: and a Ship sailing in Water, which is more Consistent then either of them, doth not Move it many Leuks; as a Stone thrown into a Calm Sea will not make Circles therin many Miles: much less can the Circumgyration, or any other Motion of the Sun, Caus such Pulses in all the vast Æther, Air, and Water, and wheresoever there is any Æthereal Light. Nor doth every Motion of one Body in another make a Commotion and Pulse therin: as a most smooth Globe turning round in Air or Water doth not Impell much, nor make any great Friction or Attrition, but only slideth by the Ambient Body; and the more Swiftly it so Moveth, the less Commotion it maketh in any other Body; or as an Intire and Solid Bullet flying in the Air maketh litle or no Noise, which is only made by Commotion, as I shall shew heerafter. Wherefore if the Sun thus Move most Swiftly in a Fluid Æther, both Circularly, and Progressively, he maketh litle or no Commotion or Impulse, (as manifestly he maketh no Sound or Noise by such Motion therin) and certeinly none in the Air or Water, wherin yet manifestly there is Light. Again, though the Emanation itself be a Motion in itself, yet it causeth no Continued Commotion in the *Diaphanum*; as when it Moveth through Glass, which is a very Consistent Body, and would easily discover

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any such Motion or *Tremor*; yet I suppose any such Motion therin by the Irradiation of Light can never be discerned with any Microscope; however certeinly when the Motion of Emanation ceaseth, and the Emanant Light hath filled all the Sphere therof, it Moveth no more but atteineth its Rest; and so is neither Moved itself, nor doth Move the *Diaphanum*, and yet it is Light still, as it it was before; and so the Motion therof is only the very Enanation, which is Instrumental in Diffusing the Light, and Caused by the Spiritual Quality therof, and not the Light by it, which is another thing, and of another Nature very farr Different from it. Also Light Moveth through a more Dens *Diaphanum* as well as it doth through a more Rare, & is not so Resisted by Density, or Consistence as Bodys are in their Motion, but only by Opacity which is Contrary to it; and that doth Refract or Reflect it as swiftly, and when it is Perpendicularly Reflected back into itself, there is another Motion therof or Reduplication of itself Directly Opposite to the Emanation in the same Perpendicular Line, and at the same Time *per omnia*, which could not be if it were any such Corporeal Motion; and yet the Light is not Obstructed, or stop'd, but very much Augmented, as well as the Heat, by such Reduplication therof.

IV. Having discovered such a Quality in Nature as Opacity, which is Contrary to Light, though it be not so Conspicuous, and therefore is not so much regarded, but denied or neglected by others, as many such Antiqualitys, as I may so call them, are, becaus they are not so Agile and Active as their Contrary Qualitys, but are for Contemperation & Fixation therof; I shall now proceed to consyder this Opacity in the Mistion therof with Light, whereby it doth so Contemper, and Fix it, and whereby also we may very plainly discover it. For as the Mistion of the fower Elements doth Produce so many Various Quintessential *Composita* by the Production and Actuation of perhaps more then fower several Qualitys in every one of them, and Variation of them, and their several Degrees, according to that Arithmetical Rule of Changes, which I formerly mentioned, so particularly the very Mistion of Light and Opacity, and the Various Degrees therof, Produce many notable Variations. And so not only Color generaly is Produced by the general Mistion therof, but all particular Colors by the particular

Variations

Variations therof. And first as I have shewed Light itself could not Exist without some Opacity, and much less be Visible without it, any more then Opacity without Light; and therefore Light Objective and Visible doth always appear in some Color or other, whether it be Direct, as in the Sun, which is a Radiant Yellow, and in the Moon, which is White, and the Æther, which is Blew, or of some such Colors; or Reflex, as in the Rainbow, wherin all those Simple and other Mist Colors do appear; and though Light which is not Objective doth cast a Brightnes, and Darknes a Shadow, and thereby may Intend or Remitt Colors, yet they Caus not any Color, more then Colors them, which yet cast some such Proportionable Brightnes, or Sadnes, as Rooms Painted White, or Black; but the Light of the Sun Reflected from Water is Yellow, and the Moon White, and the Æther Blew, (which also maketh Seas and Hills at a distance in Sude Weather to appear Blewish) though, as I have said, Density and Profundity are also in that Æthereal Blewnes Analogous, and somwhat Assistant, to Terrene Opacity, as Rarity and Tenuity are to the Æthereal Brightnes. But if the Common Light (though that also have some small Misture of Opacity) were Visible in itself without Opacity, we should see nothing besides it, as we can not well see through Flame which is Objective Light; wheras Light doth render all things Visible, and more Visible by the greater Illustration therof; and so it is said to be *Actus Diaphani*, rendring it Actualy Perspicuous, which was Potentialy such before in itself; and so also it doth Actuate the Visibility of Fixed Colors, but not the Colors themselvs which are Fixed by Mistion Internaly in themselvs; and doth Externaly Illustrate them exceedingly by any greater Brightnes therof. But Light passing through Painted Glass is by the Union therewith, and Direct *Species* of the Colors also passing through it, with the Direct Rays of Light, Imperfectly Tinged; as the Yellow and Blew of the two several Painted Glasses is by the Local Union therof; and such Tinged Rays of Light being Reflected are Visibly Colorous; becaus they were Tinged before by their Passage and Penetration through the Body of the Diaphanous Glass: and so being Localy United with the Inherent Color of the Glass, the Emanant Color or *Species* and the Light Emanant afterward continues to be so United, whereby the Light becomes Colorous; as when we look through a Painted Glass and Inherent

Color therof againſt the Light Tranſmitted through it, we thereby ſee the Color moſt plainly, becauſ that being Inherent is ſtronger then the Emanant Light; but the Rays of Emanant Light being ſomwhat ſtronger then the Emamant Color or *Species* Reflected on a Wall after ſuch Tranſmiſſion through a Painted Glaſs Window, we do not perceiv the Reflected Colors to be altogether ſo deep or ſtrong as in the Glaſs when we look through it. And if the Emanant Light be not Radiant it is not Colorous, or if it be not firſt United with the Inherent Light in the Colorate Body then it is not Colored at all, as in the Reflection of Light from a Colored Wall: and ſo alſo if it be only Reflected from the Outward *Superficies* of the Painted Glaſs, and not Tranſmitted through it, ſo that the Wall or Glaſs is the Object of our Sight, and the Common Light ſerveth only to Actuate the Viſibility therof, and is not Colorous and Objective in itſelf, or in its own Rays; and yet if they be Conſpiſſated by paſſing through a *Foramen* or *Lens*, or by Reflection, or the like, they become more Viſible; as Æther alſo is by Profundity: Or if a Glaſs be Specular, whereby the Emanant Rays of Light and *Species* of Colors Penetrate into the Profundity therof, and then are Reflected, they become Objective, becauſ the *Superficies* of the Glaſs doth not Terminate the Sight; and the Emanant Rays and *Species* Penetrating together into it, and being ſo Reflected from the Opacous *Fundus* therof are thereby rendred Objective, as if they were Inherent in the *Speculum* Reflexively, as well as they appear Directly Viſible when we look through an Incolorous Glaſs, and ſee any Colored Object beyond it: and ſo alſo in the *Superficies* of any Adiaphanous *Speculum*, as Steel or other poliſhed Metall (that doth not Suffocate the Rays by any Unequal Porosity and *Scabrities*, which doth confound the Image) they are as Viſible almoſt as the *Speculum* itſelf; and yet alſo we ſee the Metall with the Image Reflected; becauſ it is Localy United in the ſame *Superficies*, which being only of one Color (as Black Marble, Braſs, and the like) doth not Confound the Image, but only add a Tincture thereunto; wheras if it were firſt Picturated itſelf, it would prevail over the Reflected Image, which is only Reflected and not Directly Emanant from the *Superficies* therof, as its own Colors are, which are therefore more ſtrong and prevalent then it. And the Object doth not appear beyond it, becauſ the Rays do not Penetrate

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the Profundity. And these Local Unions of Light and Opacity, or of Light and Colors, which are partly Opacous, being Spiritualy only External though Localy Internal Unions *per omnia*, do not Produce a Perfect Mistion or Generation, as I have shewed, and therefore are Momentany being Localy United in one Moment, which is their Imperfect Generation, and Disunited in another, which is their Corruption. And such is the Momentaneous Generation and Corruption of some Colors which are therefore truly called Desultory, but wheras they are called Apparent, I can also admitt it in respect of the general Nature of Color which is to make Objects to Appear at Distance, by the Contact of their Emanant *Species*; and so indeed all Colors may be termed Apparent; but any such Distinction as is by some made between Colors themselvs, Real, or Apparent, as though some Colors were not Real, I can not admit; and though some affirm only Fixed Colors to be Real, and others deny even the Reality of them, I must affirm both Fixed and Desultory to be Real, according to my Rule, which I have formerly sett down; and so certeinly they are both Realy in Nature, and Real Objects of our Sens, and not only in our Mind and Reason; like the Fantastical *Species* of Colors which Melancholike and Madmen do Imaginate and Contemplate, and which are the only Apparent Colors that I know (becaus they are only *Species* and Images therof and no Real Colors in themselvs) unles we also acknowledg all Mankind to be as Fantastical, as some such indeed are, and the Assertors of this Opinion make themselvs to be, and none to have any true and Real Sens and Sight: for let these Desultory Colors in the same Position, and with all the same Circumstances, be Inspected by a thousand Sane Men one after another, and they shall all give in the same Verdict of them, which shews that they are Realy such in their own Nature, and there is not, nor can there be, in any Man any other Sensation therof: wheras any Infirmity of Sens may be rectified by a rectified Sensation, as I shall shew heerafter; and though they were only Phantasms, as the others in Imagination, yet they should be Real Phantasms, or *Entia Sensationis*, as I have said. Thus let the Yellow and Blew Glasses be always laid over one another and not removed, and you shall alway see a Green through them against the Sun, by that Local Union, as well as of any Green Produced by a Spiritual Union of both those Colors, by dying, or the like: and

though as their Generation is Momentany, so their Corruption may also be, yet you may continue them as long time as you pleas to continue the Local Union. And so also more Fixed Colors made by several Infusions of Chymical Spirits may be almost as Momentaneously Generated and Corrupted, and yet if any Chymist shall therefore deny such Fixed Colors to be Real, I desire him to reconsyder Flame, which is as Momentaneously Generated and Corrupted in the Successive Individualitys therof every Moment, and I suppose he will not deny Flame to be Real, (which is the chief Instrument of his Art) and Sound certeinly is a Real Sensible, and yet never fixed but Desultory. But the true Difference between them is, as I have said, that Desultory Colors are Generated only by Local Union Extrinsecaly, and Fixed Colors by Spiritual Mistion Intrinsecaly; and therefore Desultory Colors, wherof External Light is one Principle, as in the Prism, *Iris*, Pigeons Neck, and the like, have not only their Visibility, but also their very Coloration Actuated by the External Light; as in the Yellow & Blew Glasses laid over one another, which yet are not made Green without the Transmission of the Light through both: so that indeed all Desultory Colors are Actuated by External Light, but Fixed Colors are Actualy in themselvs what they are, without any External Light, which doth only Actuate the Visibility thereof whereby they Appear to our Sight by drawing forth the Visible *Species* which it doth Actuate, as I shall shew heerafter; but as a Picture under a Curtain, and many such other things may Actualy be in themselvs, though they do not Appear to our Senses, so are Fixed Colors in the Dark, by the Internal Mistion of their own Lucidity and Opacity, which seems to me to be very Evident by Reason, becaus they are Realy such Mistions of Light and Opacity in themselvs Internaly, and so are Colors in themselvs without any External Light, though not Visible to us without it: and also to Sens, by the known Experiment of White which in the same Homogeneous Body, Cloth, Paper, or the like, will not be so soon fired by the Burning Glass as if it be Black, though there be no other Imaginable Difference but only of the Colors, and that Difference is Intrinsecaly in themselvs, and though it is true that the Sun beams Transmitted through the Burning Glass do convey Light as well as Heat, yet I do not conceiv the Light to be Consyderable heerin, or if it be, it is one and the same in itself

ſelf as it doth Actuate the Viſibility of both the Colors Externaly, but I ſuppoſe that as it doth paſs together in the ſame Emanant Rays with the Heat, and ſo meet with the Internal Light of the White, the Whiteues, which is more Lucid in itſelf doth, as all Homogeneous Natures, Univocaly Conſpire with it and Dilate itſelf therewith, which is called a Segregation of Rays, whereby the Heat in the ſame Rays is alſo Diffuſed, and ſo Weakned, and therefore can not Operate ſo Intenſly upon it, as it doth upon Black; which hath moſt Opacity in itſelf, that is Contrary unto Light, and doth Congregate the Rays therof, that Oppugn it, and conſequently the Heat, which thereby doth Operate more Intenſly upon it; and ſo it is farr more eaſily Incenſed; and accordingly as Colors are more White and Luminous, or Black and Opacous, ſo they do more or leſs Segregate or Congregate the Rays of Light, and conſequently of Heat: wherefore there is in all Color ſuch an Internal Light, which is in the Miſtion of the other Elements, as well as Heat in Fume, which is a kind of Culinary Fire, and ſo I may call this, Culinary Light; which if it be not Perfectly Fixed with Opacity, as in Flame, and the like, makes only Imperfect and Meteorical Colors; yet not ſuch as are ſo Deſultory as the others that are only by Local Union, and if it be Perfectly Fixed, as in other Colorate Bodys, doth Generate more Fixed Colors: And as there are theſe two Principles of Colors, that is the Agile Light, and Opacity which doth Fix it, ſo there are only thoſe two Original Colors, White wherin Light is Predominant, and Black wherin Opacity is Predominant; concerning which laſt I have one Obſervation, that as all Deſultory Colors are, as I have ſaid, Cauſed by External Light; ſo among all thoſe Deſultory Colors, Black, wherin Opacity is Predominant, was never ſeen in any Priſm, *Iris*, or Pigeons Neck, or the like; becauſ Opacity, which doth Fix Color, as I have ſaid, is moſt Contrary to their Deſultory Nature; and yet whereas Diers ſay White is no Color in their Senſ, becauſ it will take any other Color, others Philoſophicaly ſpeaking, ſay, that Black is no Color, though it will not take any other Color, and generaly that all Colors are only Apparitions and Spectres, who, as though they could Create and Annihilate what they pleaſ, will Add to and Diminiſh from Natures Inventory as they liſt. And thus they make all Colors to be only certein Deſultory Variations of the External Light upon the *Superficies* of Bodys, and the Ob-

ject of the most Noble Sens to be only a fictitious Impoſture, affirming Black to be from the Suffocation of the Rays by an Unequal and Porous *Superficies*, and White the Contrary, and ſo all other Intermediate Colors only more or leſs ſuch Suffocations of the Rays; which is moſt Senſibly falſ, if we may believ our own Eys; for Snow is moſt Porous, and yet moſt White, Jett poliſhed leaſt Porous, and yet moſt Black; and ſo Painted Glaſs is either White or Black, and yet the Rays Penetrate more through the White then the Black, and both of them are apparently White and Black in themſelvs before, and without any ſuch Penetration; and ſo Bodys of a like Surface are Indifferently either White or Black; as poliſhed Marble, Skins of *Europæans*, and *Ethiopians*, and the like. All which may alſo Chymicaly be Demonſtrated by the Generation of Colors in Flame; which though they are as Momentaneous as the Flame, yet are no otherwiſe Deſultory then the Flame itſelf, as I have ſaid; wherin, when the *Fomes* therof, as the Wax, or Tallow of a Candle, is firſt Incenſed, there is before it be Inflamed or below the Flame a manifeſt Black, and ſo in the *Fuligo*, and aſſoon as it is Inflamed a Blew, and in the pureſt Flame, a White, and in that which is in the *Cuſpis*, a Yellow, and if it be very Fuliginous, Red, (which is alſo very manifeſt in the Robuſt Fire of the Wike) whereby it plainly appears that Black is from a Terrene Quality in the *Fomes*, and *Fuligo*; and White from the Æthereal Quality of the Flame: wherof I call the one Opacity, and the other Light; though both of theſe be Miſt together, as all the Elements and their Contrary Qualitys are; but Opacity is notably Predominant in Black, and Light in White, and all other Simple Colors are only Gradual Predominations of either of them; as Blew of leſs Opacity and more Light then Black; and Yellow of leſs Light and more Opacity then White; and I ſuppoſe Red to be a more Intenſ and Condenſ Yellow, or perhaps of a midle Degree between Yellow and Blew, as ſeems by Local Union of any *Fuligo* with Yellow which renders it more Reddiſh; but certeinly it is not Miſt of both, for that is a Compound Color, which is Green, as Gray is of Black and White; and ſo all other Compounds, and Decompounds, which Painters, and Diers, make of theſe Simple Colors. And as theſe Meteorical Colors, ſo alſo all other more Perfect Generations of Fixed Colors are by Actuating the Internal Lucidity or Opacity therof,

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more, or leſs: and their Corruption by Reducing it into Potentiality. As the moſt White Wood by Actuating the Fuliginous Opacity therof in Charking becomes a Black Coal; and when that *Fuligo* is Emitted by Burning, it becomes again a Whitiſh Aſh, or Grey, Miſt of both.

V. The Antecedent Darknes, which was in the firſt *Chaos*, was the Pure Evening therof, before any Light, which was Created after it; and therefore Light, rather then Heat, is particularly mentioned in the Work of this Firſt Day; becauſ thereby this, and all Succeſſive Days, were made and Divided into Day and Night Artificial; as it followeth therupon, *And God Divided the Light from the Darkneſs*, &c. And ſo in this whole Hiſtory of the Creation (which is as the Decalog, and the like, very Compendious, and Comprehenſive) though only ſome more General or Principal things be mentioned, yet all others that are Coordinate and Connatural muſt alſo be Intended: and certeinly there never was any Syſtem of the World declared and deſcribed either more truly, or in a more ſhort *Epitome*. Now wheras the Antecedent Darknes did continue for ſome Time on the face of the Deep, wherin the Spirit of God Moved upon it, it may be Curiouſly Inquired, how long that Space of Time was, wherin the Antecedent Darknes was and continued, before the firſt Light was Created? but as Divine Wiſedom doth not regard Human Curioſity, nor attend to ſatisfy it, ſo I eſteem it Impertinent, though I may diſcourſ it *Humanitus*. However I muſt conceiv, as I have ſaid, that the Spirit of God did not only Move or Incubate on the firſt *Chaos* to Prepare and Prediſpoſe it before and untill the Light was Created, but Conformably untill all the other Original Creatures in all the Six Days were Produced, and the whole Creation and Courſ of Nature finiſhed: for they were all Supernatural and the Immediate Works of God. And concerning the particular Space of Time between the General and Proper Creation or Begining, and the firſt Improper Creation of Light, I conceiv it probably to have been Twelv Hours, and ſomwhat more, and that there was neither any Diurnal, nor any Nocturnal Light, during that Time: For ſo the Computation of all the Six Days is by Evening and Morning aſwell as of the Firſt; and the Evening and Morning made the Firſt Proper Day Natural, which moſt probably was Equinoctial, and was

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afterward Divided into Day and Night Artificial; and the Evening is alway sett before the Morning, as it was before it in Time, but the Day before the Night, as it is before it in Nature; becauſ the Day Artificial was firſt ſo made by Dividing the Light from the Darknes, that is, into a Diurnal, and Nocturnal Light, and ſo God ſaith, *I form the Light and Create Darknes*, as he did in the Firſt Day Originaly; wheras Pure Darknes is not Creable, but the Night which is called Dark Comparatively. Wherefore as this Improper Creation in the Six Days was Original Generation, wherunto all Succeſſive is Conformable, ſo I ſuppoſe that as the whole Day, according to the Diurnal Courſ of the Æther then firſt putt into Motion, and ſo ſtill continuing is fower and twenty Hours and ſomwhat more; ſo the two Halvs therof, or firſt Evening and Morning muſt be ſuppoſed to have been alſo of the ſame Duration, and each of them Equal, as well as the Second and Third, before the Sun and Moon were Created. Nor can I conceiv how there could be any ſuch Day and Night Artificial in the Firſt Day, as ſince; becauſ they were then firſt ſo Created after the firſt Evening was ended; but could not Poſſibly be before they were ſo Created: And when Light was Created it was Morning in all the Æther in reſpect of the Precedent Evening, and ſo there was never ſince any ſuch Evening and Morning, as made the firſt Day Natural: becauſ there is no ſuch Pure Darknes, but only Comparative Darknes, whereby Night was made after the Evening was ended, by the firſt Creation of Light, which was the firſt Morning; and God in that Morning did afterward Divide the Light into a Diurnal and Nocturnal Proportion therof, whereby he made Day and Night Artificial. And thus, though Time was Created in the Begining, from whence alſo the moſt Proper Natural Day did Commence, yet the Artificial was Created in that Firſt Natural Day; and the Day Natural according to the Courſ of the Sun in the Fourth Day, and the two Parts of that Day which we commonly but more Improperly call Day Natural, that is, Night and Day are not always Equal with the Parts of all other Days: wheras the two Parts of the Proper Day Natural, that is, the Evening and Morning being Computed from the Begining are always Equal and each of them Twelv Hours and ſomwhat more. And becauſ the Parts of the Solar or Improper Day Natural, except Equinoctial, are Unequal, therefore the Whole may

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be sooner as in Summer, or later as in Winter; but the Proper Natural Day is never sooner or later, becaus it is the Succession of Fower and Twenty Hours Daily from the first Fower and Twenty Hours, and Begining of the first Day Natural: and so all the Six Days both before and after the Sun and Moon were made to Rule the Day and Night, and also the Seaventh or Sabbath are Computed accordingly. Wherefore becaus this Day is most Even Exact and Invariable according to Time, God also appointed it, and not the Improper Day Natural, to be the Measure of Time *in Sacris*, and so it is said *from Even to Even shall ye celebrate your Sabbath*, and not from Night to Night, and though the later *Jews* did not so observ it; yet *Ab Initio non fuit sic.* But both the Day and Time of the Christian Sabbath which is appointed for us *Gentiles* in all Parts of the Earth, is, and must be Altered by the Resurrection of *Christ*, which if it should begin as the former at Evening, as some would have it, then it should begin before the Resurrection; for unless that were also some Time after the Begining of the Evening *Christ* should not have laid in the Grave three Days Synechdochicaly, as most certainly he did, and though it be expresly declared when the Creation was finished and God first Rested, that is, at the end of the Sixth Evening and Morning or Proper Day Natural; yet it is not so expressed or ascerteined when *Christ* Rose again, but only that he Rose very early in the Morning of the Third Day, that is, the Solar, or Improperly Natural. Now as there was not only a Proper Natural Day, but also a Division therin of the Light from the Comparative Darknes, and so Day and Night Artificial made thereby in the First Day Originaly, and Successively in the Second and Third Day, before the Sun or Moon were made to Rule them, more particularly, as I shall shew heerafter; so certeinly there must have been some Circumrotation of the Æther, and of the Light Inherent therin in the Precedent Days; for if the Light were Equaly in all the Æther, then there should have been Equaly all Day in all the Æther; and there could not be such Day in one Hemisphere and Night in the other without a Circumrotation of the Æther and of the Light, wheras there was such a Division of the Light, as made Day and Night Artificial therin, and this Day and Night were then Originaly made, and were such as they have ever since been Successively by the Diurnal Cours of the Æther, (except only the more Special Variations therof by the Proper Courses of the Sun and Moon

which were made thereby, and are Annual and Menstruous, but not Diurnal) which must necessarily be by the Circumgyration of the whole Æther, and of the Light therof in one Hemisphere, as the Sun now is so carried about by the Æther Diurnaly. Certeinly the Earth, Water, or Air, or any of them could not so Move in this First Day, becaus they were not yet Improperly Created, or so Made, as it is said of the Air that God *Made* or fitted *the Firmament* therof, or *Expansum*, in the Second Day, (though they were Properly Created in the Begining in their several Bodys and Spheres) but were then all in Rest, and only the Spirit of God Moved among them, and as the Irregular Winds, and the Regular Courses of the Tides and of the Sun, Moon and Starrs were not before, or untill those other Elementary Bodys were Improperly Created, so neither was there any Motion of the Earth; wherof if we could suppose any such Motion, yet we may not reasonably suppose it to have been before the Third Day, and Improper Creation of the Earth therin; concerning which I shall Discours heerafter, and now only add one other Observation; that as the Sun, though farr less then one Hemisphere of the Æther, yet maketh Day therin by his Emanant Rays, so probably the Diurnal Light in this First Day did not fill one whole Hemisphere, but only some such part therof, as according to the Vigor and Extent of the Emanant Rays therof did make Day Artificial in one Hemisphere, and perhaps with some such *Crepuscula*, as the Sun now doth make, for we may well conceiv, that First Day and Night to have been Analogous to every Day since in all the general Circumstances therof (besides only such as are more specialy superinduced in the Variations of sooner, or later, more, or less, by the Courses of the Sun and Moon) wheras if that Diurnal Light Inherent should have filled one whole Hemisphere, the Emanant Rays therof would have extended much farther, and the Inherent Light should have been Hemispherical, which is not Conformable to the Natural Figure therof: and therefore I rather conceiv, that it was a Particular Globe *Glomus* or *Confluvium* collected from the Light, which was first Generaly and Diffusively Created in the whole Æther, and that which was left in the common Body therof is therefore Comparatively called Darknes; and though it were not strictly such Darknes, as was in the *Chaos*, yet the Expression is not therefore Popular, so as some would make all the Philosophical Expressions in Scripture to be but Necessarily to be so

so understood, for there are no *Puræ Tenebræ* in the whole Elementary Nature, and in the Superæther there is either a Superætherea[l] Light, or neither Light, nor Darknes; for where there is not, nor Naturaly ought to be any Positive, there is no Privative, which is founded in the Positive, & is only the Privation therof; as in a Stone there is neither Sight nor Blindnes: wherefore after the first Creation of Light, that Darknes must necessarily be understood of Comparative Darknes only; and this is the Natural Darknes which God Created, and is also sufficiently so explained in the ensuing words, *And the Darknes he called Night*, which hath its Nocturnal Light: whereby it is expresly and most exactly Distinguished from a Pure Privation of Light, such as was Antecedently in the *Chaos*, wherin there was neither Day nor Night. And heer again Cavillation, which is endles, may proceed to term these Expressions, *God Said*, or *Called*, and the like, Popular; though as the others, so these also are most Necessary; for indeed nothing can be Properly spoken of God, either as he is in Essence, or in Operation, and there can be no Expression more apposite, then that the Creatures are *Verba Mentis Divinæ*. And heer I must affirm of this whole History of Creation that it is not Popular, as some would have it, and thereby render it Insignificant unto all others, as well as to themselvs; whereby they have lost the Benefit of so great a Treasure, which hath been a *Chaos* to this Day, and is still hid from the Wise and Prudent; or rather they thus hide it from themselvs: though I am confident that neither themselvs, nor any other, can ever declare or describe such a System of the World in more brief or less Popular Expressions. Wherefore I term it a History, that is, of Matter of Fact; which hath only such apt Expressions as serv to declare and describe the Matter of Fact, and therefore certeinly are not Popular; otherwise we may call all the Sacred History of *Adam* and *Eve*, of *Noah*, of *Abraham*, *Isaac*, and *Jacob*, and of all the Patriarchs, Judges, and Kings, and Governors, and of *Christ* and his Apostles, Popular; and reject all the Matters of Fact Recorded both in the Old, and New Testament, and our very Creed; which should be most Irreligious and also Irrational. Thus when God saith, *In the Begining he Created the Heaven and the Earth*; shall any say, he did not, and so of the rest? And if any may be so Irreligious as to deny the Verity of the Fact, yet he may not be so Irrational as to deny the Veracity of the Expressi-

ons, or to affirm that the Scripture doth not say, that *In the Beginning God Created the Heaven and the Earth*, and so of the rest. But that we may not frame any Popular Notion of what we intend by a Popular Expression, and so Confound our Discourse therof, as I have hitherto strictly examined other Terms and Expressions, so I shall also now examin this very Expression of an Expression. And I acknowledg generaly all Language to be Popular; becauf Words are no Natural Signatures, but only Instituted *Tesserae*, or *Symbola* of Things, Coined by Men, and so made to pass Current among themselvs. And since the Confusion of Languages every National Language is more particularly Popular, or peculiar to the People of that Nation; and the same Word may signify one Thing in one Tong, and another in another; as *Nay* in *English* hath a Contrary Signification in *Greek*. Wherefore I acknowledg also that there is such Popularity in the *Hebrew* Tong, and also many Idiotisms therof, as well as in others; but I suppose this is not the Popularity Intended; for then we should also Invalidate all Language as well as this, and all Books as well as the Bible. Also there are certein General Propertys and Modifications of all Human Language, as well as several Idiotisms of Particular Languages. As that which is spoken Respectively of any Thing, or in one Respect, according to that which is the Subject Matter of the present Discourse, can not reasonably by any Rational Men in any Language be Interpreted Absolutely, or in all Respects whatsoever. And so again, as I have before noted, that which no Human Language can Properly Express may not reasonably by any Rational Men be Interpreted Properly, and the like; which if we should not allow, we should destroy all Human Discourse; and otherwise then so, I know not one Popular Expression in this whole History of the Creation; and such Popularity also is, and must be, in any other History of Matter of Fact: and therefore this can be no reason why any should regard it less then any other Philosophical Discourses whatsoever. Wherefore they must rather Intend by Popular Expressions such as are according to false Apprehensions of Common People, or Deceptions of Sense, and the like; and I suppose, they can not shew any one such in all this Narration, and indeed it is great Impiety to conceiv that there should be any such in it, which doth so Historicaly and Intentionaly declare and describe the *Genesis* of the World:

World: though in other parts of the Scripture, which are not so Historical and Intentional, I also acknowledg that there are all the Varietys of Human Language, and so there are many Expressions which are spoke, as we say *Rotunde*, and so indeed Popularly for common Use, and such as are allowed in all Arts and Sciences, even Mathematical; and many Figurative Expressions, yea Hyperbolical and Ironical, in some more Poetical and Rhetorical parts therof; which yet may as easily be discerned as in any ordinary Discours: but certeinly the Divine Verity doth not any where offer any thing of Falsity or Deception, but Expresseth most Infallible Truth in the common Language of Mankind, and particularly according to those Tongs, wherin it is writ; and most Wisely Ordereth and Varieth the Expressions according to the Occasion and Intention therof: and so heer concerning the *Genesis* of the World it speaketh not only most truly, but also as Narratively, and as Philosophicaly as any Philosopher whatsoever: and therefore none may justly neglect it upon any such pretension of Popularity; neither do I suppose that to be the very reason therof, as is pretended, but rather that it speaketh too Expresly and Exactly those things which are Contrary to the Private Opinions of such Pretenders, who, becaus they can not Evade the Divine Authority therof, would Elude it, by supposing that it neither doth, nor can, speak any thing against their own preconceived Opinions: and therefore as they esteem all the World of Mankind besides themselvs Popular, and to be in a Popular Error; so they most Profanely and Presumptuously Interpret Scripture itself rather according to Common Errors, as they suppose, then will endure it to Contradict their own greater Errors, which yet they will maintein as Oraculous: and I find this Humor to prevail not only with such who do wholy exclude Scripture from all Philosophical Discourses; but also in many Commentators, who rather correct *Moses* by Heathenish Philosophers, in any such Points as are not Articles of our Creed (as the Creation, and the like) then them by *Moses* in their Timid and Partial Explications: yea even Translators, who should strictly embrace the very Letter of the Text, yet do thus Warp and Incline as farr as they may in their very Expressions, as I have observed: and I know not how among them all this Divine Philosophy hath hitherto been Rejected, Neglected, or Abused; whereby Mankind hath received

litle more satisfaction from it then from any other Human Philosophy; though it be the only Standard of Truth, and the first Sentence therof, *In the Begining*,&c. the very *Alpha* of all Divine Letters, and the Foundation of all that Divinity, and Morality, or our whole Duty toward God and Man that is conteined in the whole Scripture: whereby it plainly appears how firm a Connexion there is between Theology, Morality, and Natural Philosophy; and of what Consequence and Concernment, according to Divine Wisdom, a right and sound Knowledg therof is both in Church, and State: and I dare affirm that there never was extant in the World any other Writing that hath more firmly and plainly laid the Foundations of these three most Noble and Profitable Sciences: and as it is my Designe to Demonstrate it even in Natural Philosophy, (which perhaps men may least expect,) so I may suppose, if I shall perform and obtein this, they will easily grant it of the others: And I hope, though I may fall short of mine own Intention and their Satisfaction, yet I shall discover so much Light therof, that others will begin to believ that more may be derived from this Fountain, and so proceed to perfect what I have begun. Certeinly whatsoever is in this Sacred History, is Truth, and all that Truth is Fundamental, wherupon Human Reason (to which God hath left the rest for the Exercitation and Improvement therof) may proceed to build; but other Foundation then this can no Man lay. And though the Divine Spirit in Inditing it did not intend to satisfy the more Curious and Impertinent, yet such things as no Memory of Man hath otherwise Preserved and Delivered, nor our Reason and Judgment could have Retrived, are heer clearly Reveled, and faithfully Recorded. As not only that there was a Creation and a Begining, but how many Thousand Years since, and all the Succeeding Chronology of the World, and the whole Order and Process of Created Nature, how it was first Ordained and Instituted in Six several Days, and the like: and as all Christian Historians have rectified the Fabulous Chronology of Pagans by the former, so should Christian Philosophers their Contradictory and Unsatisfactory Philosophy by the latter. But again on the other hand we must carefully avoid all Cabalistical and Allegorical Interpretations therof, and satisfy our selvs with the plain and simple Sens of the Text, according to the Subject Matter therof, and Context of Scripture. And thus

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wheras the Rabbins from thoſe former Expreſſions, *God ſaid*, and *God called it*, and the like, have aſſerted the *Hebrew* Language, wherin this Hiſtory of the Creation was writ by *Moſes*, and the Names of Day, Night, Heaven, Sea, Earth, and the like, which are ſaid thus to be Named by God, to be therefore the Primitive Language Inſtituted by God, and Original of all others, I dare not ſo affirm, though I otherwiſe grant it to be the moſt antient of all Languages now Extant, becauſ that Book is the moſt antient of all Books now Extant. But God is alſo ſaid to *call the Starrs by their Names*, though all of them be not Expreſſed: for their Names to him who is the Creator of all things are their Created Natures, by which he knows them Immediately and Eſſentialy, and ſo he ſpeaks by Real Language, or by his Works, which, as I have ſaid, are the Extrinſecal and Artificial Words of the Divine Mind, and his Word is only a Comment therupon, and ſo the Heaven and Earth were Denominated by their Created Natures; and when he made Day and Night, he ſo denominated them by making them to be ſuch. And heerin Divine Language and Human Differ; for wheras *Adam* afterward gave Names unto the Creatures, he only Verbaly called them by ſome Inſtituted Names, Expreſſive of ſuch Natures as God had made them; but did not, nor could Realy make them to be ſuch. And the Primitive Language, whatſoever it was, may rather be referred to him; for it is Mans Creature, and of Human Inſtitution; and poſſibly he might ſpeak that Language: and ſo it is ſaid, *Adam* called his wife *Chevah*, and ſhe her ſon *Sheth*. However it is certein they both ſpake ſome Language, which alſo declares the great Perfection of their Created Witt, which could ſo ſoon frame ſuch a Common Language whereby they underſtood one another, and that muſt be Primitive, becauſ they were the firſt Man and Woman. And if God afterward ſpake unto them Vocaly and *Humanitus*, he alſo ſpake their Language, by which they might underſtand him: And it is expreſsly ſaid that God brought the Beaſts and Fowls to *Adam*, *To ſee what he would Call them: And whatſoever Adam Called every Living Creature, that was the Name therof. And Adam gave Names to all Catell, and to the Fowls of the Air, and to every Beaſt of the Field*: ſo that plainly all theſe Names were Inſtituted Originaly by *Adam*, and not by God himſelf Immediatelv, who is ſaid to bring them unto him, *To ſee what he would Call them*; that

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is, to Exercise his Human Facultys both of Speech and Reason: and accordingly *Adam* did give to every one his Specifical Name, and *that was the Name therof*. Therefore wheras they make the Divine Institution of the *Hebrew* Language to be the Foundation of their *Cabal*, that very Foundation is too Cabalistical, and remains to be proved: and perhaps though that Language generaly were Primitive, yet the Dialect therof, as of all others, might be much Altered before the Confusion, but especialy after it, and most probably it was first spoken without the Character, which they also make to be Cabalistical. And there are some such Criticks who accuse the *Hebrew* Language itself of many Defects; wherefore certeinly it was not Immediately from God, all whose Immediate Works are most Perfect; but from Man; and if from *Adam* in Paradise Originaly, hath been since much altered and corrupted. Therefore as, I conceiv, there is nothing Mystical or Cabalistical in Numbers, so neither in Letters or Figures, or any other Quantitys; and as there is only a plain Signature of the Notion rather then of the Thing in any such Literal Characters, so also in Words which are only Sounds. And so the Names which *Adam* gave, did signify only Notionaly and Intellectualy; whereby also it appears, that he had a most Perfect Philosophical Contemplation and Inspection of their Natures, according to his most Perfect Reason and Natural Understanding: which God, who had Created his Intellective Spirit, and given him Dominion thereby over all Sensitive and Inferior Natures, brought these most Curious and Difficult Pieces of Nature, and in the very next *Classis* therof to himself, purposely to Exercise and Discover to himself: And though some, who think themselvs Wiser then *Adam*, deny even this to him, and very Presumptuously Arrogate to themselvs more Knowledg of Nature by some Artificial Advantages, as of the Telescope and Microscope, and the like, then ever *Adam* had in Paradise; I will not deny but that they may have more Sensation thereby then he Actualy had, but yet I suppose both his Understanding to have been farr more Telescopical, and also his Witt more Microscopical then ours; and that Potentialy he was able to have Contrived all such Artificial Advantages whatsoever as well as Language, if he had any such need therof, since they are only the Applications of certein Natural Causalitys which were then most Perfect, and wherof he had a most Perfect Intellection

tellection according to his Perfect Human Nature in that Conjunct State therof wherin he was Created. But yet I do not conceiv that he did know, or could even then know such things as are Naturaly in themselvs Indemonstrable and Incomprehensible to any Human Reason, as Mathematical Points, and other *Asymmetra*, which yet are the very least and lowest of Entitys; becaus, as I have shewed, they are Demonstrably Indemonstrable, and were purposely so secreted by God for the Humiliation of Man in his most Perfect State, and for the Admiration of himself Seen in his meanest Workmanship: for as there is Still left in Nature *Veritas in Profundo*, for the Exercise of Human Reason and Study, and it is Sloth and Idlenes in us not to Digg and Search for it; so there is also *Veritas in Abysso*, which is Inscrutable, and it is Folly in any to Inquire farther into it. And so there are many things which we may Apprehend, That they are, but can never Comprehend, What they are: and when we once come to know that we can know no more of them, we have arrived to the utmost Bound of Human Knowledg; and there we must Acquiesce, and not Affect Contradictions, to know *Omne Scibile & non Scibile*; which is a Madnes beyond the Tentation of *Adam*, who knew that he could know no more then he did as Man in his present State, and therefore Aspired to be as the Gods, knowing Good and Evill. And though some term such a Prudent Ignorance and Sober Acquiescence, *Ignorantiæ Asylum*; yet it is indeed rather *Scientiæ Adytum*, wherin Humble and Pious Minds Adore and Admire their Creator, who is both Infinite in his Essence, and Incomprehensible in his Operations.

VI. Now let us Praise the Infinite *Jehovah*; Immens, and Incomprehensible; Eternal, and Necessary; One, and Universal Being, and Welbeing in Himself. Who most freely overflowing in the Creation of this Finite World, as a Transient Effect of himself, first Caused it to Start forth from Absolute Notheing into Being, and afterward Invested the Naked Being of the *Chaos* with a Perfect Welbeing in Six Days. Which thereby was made to be a Finite Somthing in itself, but as Nothing in his Infinity; Mensurable in itself, but as Nothing in his Immensity; Temporary in itself, but as Nothing in his Eternity; Numerable in itself, but as Nothing in his Unity; who still comprehends all Creatures

in their Essences, as he did before in their Possibilitys. And as the World was Created by him without itself, so it would again be Annihilated of itself, without his Continued Creation. Who hath built this great City of the Univers for himself, and for the Majesty of his Kingdom; and hath Created all his Subjects therin by his own Immediate Power, and doth Govern them all, and all their Subordinations for his own Supreme Glory. Who hath made the Utmost and Highest Sphere therof to be his Holy Temple; Ingenerable, and Incorruptible: whose Roof and Cover is the *Superficies* of the Universal Globe, Circularly Including all Created Entity within itself, and Excluding all Nonentity from itself. And the Immovable Foundations therof are Arched over the whole Elementary World; wherof the Vast Æther, and Highest Convexity therof, is less then the lowest Concavity of the Superæther; and the whole Æthereal Sphere is the great Partition between it and the Immortal Inhabitants therof, and the Mortal Inhabitants of the Inferior Globe; Disterminating them not only by its Immens Superiority and Profundity, but also by its most Rapid Motion; and Defending itself from all their Assalts and Encounters, while it Predominateth over them all: Whose Heat as a true *Archæus Faber*, or *Vulcan*, from which nothing is hid, Generateth and Corrupteth them; either like a *Phœbus*, Fostering and Nourishing them in the more Temperate Zone; or like a *Phaeton*, Burning and Consuming them in the Torrid Zone therof. And therefore is fartheſt Removed from them, and Diverted by its own Perpetual Motion, and Tempered by the Mediation of the Frigid Air, or Drowned with the Clammy Water, or Imprisoned in the Consistent Earth, untill at last this Firstborn and Strength of Nature shall Destroy them all with an Universal Conflagration, and turn the very Original *Chaos* into an Everlasting *Gehenna*. Also Light, the other of those Æthereal *Gemini*, is as Amiable, at Heat is Powerfull; Actuating all the Visible Beautys of Nature, and is farr more Beautifull in itself; Discovering all that is between us in any of the other Elements and its own Profundity; Adorning Culinary Fire with a Golden *Flammeum*: so that Infants newly born are ravished with the Lustre, and fix their Eys on the Beauty therof, and all Domestical and Savage Beasts both Love and Dread the Majesty therof. Which opening the Shopwindows of the World setts forth all the Wares

Wares therof with no falſ Lights; Inriching Gold itſelf with its Brightnes, and Irradiating Jewells with its Rays. Which maketh Day by its deſired Preſence, and Night by its deplored Abſence. And is in itſelf the moſt Excellent Senſible of the moſt Excellent Senſ, and the Viſible Hieroglyphike of Inviſible Spirits; and of all other Elementary Natures affordeth moſt both of Contemplation and Converſation to Senſitive and Intellective *Animals*.

SECTION

SECTION VIII.

And God said, Let there be a Firmament in the midst of the Waters; and let it Divide the Waters from the Waters. And God made the Firmament: and Divided the Waters which were under the Firmament from the Waters which were above the Firmament. And it was so. And God called the Firmament Heaven, And the Evening and the Morning were the Second Day.

EXPLICATION.

God having Perfected the Æther, did by the Heat therof cauſ the Vapors of Water to Aſcend into the Air; when it alſo was fitly Expanded between the Æther and the Waters, and thereby the Vapors of Water which were above were Divided from the Waters beneath. And this Aereal *Expanſum* was another Heaven, and ſo Perfected in the Second Day.

ILLUSTRATION.

1. *Of the Air.* 2. *Of the Elaſticity therof.* 3. *Of Cold.* 4. *Of Sounds.* 5. *Of Meteors therin.*

1. THe Air is the next Element to Æther, and ſeemeth to be Continuous with it, becauſ it is alſo Diaphanous, and doth not Terminate the Sight. And ſo it is called Firmament or *Expanſum*,

Expanſum, as well as the Æther, and alſo Heaven, as well as the Superæther. And becauſ it is the next and Immediate Heaven to us, therefore the general Name of Heaven is according to Hebraical Etymology moſt Proper and Peculiar to it, though the Supēræther be the moſt Stupendous Excellent Heaven in its own Nature, as I have ſaid. And as we generaly call all that is above us Heaven, ſo in that reſpect this is the Firſt Heavēn, Æther the Second, and Superæther the Third. But it is in itſelf very Different from both them above it, and alſo from Water, and Earth below it; and as Different from all the other Elements, as they are generaly one from another, becauſ they are ſeveral Elements; though particularly as they are neerer in Situation, ſo alſo in Nature one to another. And Air is of a Midle Nature between Æther and Water, as Water is between Air and Earth; and ſo conſydered with the Æthereal Rays Emanant into it may be called an Aeriæthereous Sphere, and with the Vapors and the *Effluvia* therof Aſcending into it an Aquaereous Sphere, as Water and Earth are a Terraqueous Globe. And though becauſ it hath Spiritualy leſs Senſible Qualitys then Æther, and a leſs Denſ or Groſs Body then Water (ſo that any Veſſel filled with it is Comparatively ſaid to be Empty, and Poeticaly it is called the *Inane*, and Chymiſts in their moſt Curious Separations can not well diſcern it) yet God who Created it hath diſcovered it to be a particular Element, and one of the three Heavens, and the Fowls of that Heaven feel and find it to be ſuch in their flying therin; and though it be in Rarity next to Æther, yet both of them have ſome Denſity, and a Proportionable Weight, as I have ſaid. Alſo though it be farr more Rare then Water which is ſuppoſed to be about a thouſand times more Denſ then the Atmoſphere according to the Common Temper therof, and may be many times more Denſ then Air Rarefied or Expanded; yet perhaps as Water and Earth do more agree in Denſity, ſo alſo Air and Æther (which are both called *Expanſa*) in Rarity. But as Air is thus Rare, ſo it is not only capable of Compreſſion more then Water, but alſo of Dilatation or Expanſion more then Æther; which Expanſion therof is now made famous by the Name of Elaſticity, wherof I ſhall purpoſely treat afterward, and therefore not now prevent my ſelf. As Aſtronomers have deviſed ſeveral Spheres and Regions in the Æther, ſo have others alſo in the Air; wheras

indeed they have both only their own Proper Regions, which are ſeveral, becauſ they are both of ſeveral Denſity and Rarity, and of ſeveral Elementary Natures; and ſo with the other two Divide the whole Elementary Globe into their fower ſeveral Provinces, as I have ſhewed; and if any could ſhew us any ſuch Diviſion Corporeal, and Spiritual, or either of them, in the Æther or Air themſelvs, they ſhould Prove what they Say, and not only Say what they Imagin. But though no Colorable Cauſ be offered to make ſuch Partitions in Æther, except the Various Motions of the Sydereous Bodys, which Move in the Æther, and are Moved with the Æther, and need no ſuch Proper Spheres, as I have ſhewed; yet there is a more Senſible Pretenſion to prove Three ſeveral Regions in the Air, which will be alſo found to be like them in the Æther, only in Notion, and not in Nature: for wheras they aſſigne the Firſt Region to be and extend ſo farr as the Emanant Rays of Æther are Reflected from the Earth, the Midle to be where that Reflection endeth, and wherin the Meteors are, and the Third above them, and ſo Immediately Contiguous to the Æther; I find no ſuch Partition therof, neither in the Text, nor in Nature. For themſelvs do not apprehend the Firſt Region to be many Miles high, (nor indeed can it be of any great Hight, if it be below all Meteors, Vapors, Dews, and the like, which continualy Aſcend into it from the Terraqueous Globe, and are not very high) but certeinly the Rays are Reflected much farther then any hath yet aſſigned the utmoſt Hight of the whole Air to be. It is reported that the Pike of *Teneriff*, and ſome ſuch other Eminences of the Earth, may be ſeen at the Diſtance of about three Degrees from them, which can not be by the Direct Rays therof, being no Lucid Bodys, and therefore muſt be by the Reflected Rays of Æther, which are Reflected ſo farr through the Air; otherwiſe there could be no Viſion of the Object at ſuch a Diſtance: though indeed Reflection be farr ſhorter then Direct Emanation, (and perhaps there may be ſome ſuch Proportions therof, as there are of the Deſcent and Reflected Motion of any Ball or Stone from a Paviment.) And therefore we can not ſee ſo farr by the Reflected Rays of a Candle in the Night, as we may ſee the Candle itſelf by the Direct Rays therof. Now Heat is a Congenerous Quality of Light, and Emanant with it in the ſame Æthereal Rays, as appears by the Burning Glaſs; and though the Heat of the Sun beams doth Penetrate farther into the Earth, then the Light therof, becauſ it is not reſiſted

sisted by the Opacity therof, which is not Contrary therunto, but to Light, and is only hindered by the Density, and so may not be Reflected altogether so much, becaus it Penetrates more (which also proves Heat and Light to be several Qualitys) yet certeinly Heat can not so farr fall short of the Light, but rather there is some Degree of Heat Reflected with the Light unto the very Æther, though Proportionably less; and then, according to their own assignment, there is but one Region of the Air. Again the Vapors of Water are said to Ascend above the Airy *Expansum* Indefinitely, which may be to the utmost Hight therof, as well as all over it: and as there are Bright and Dry Clouds above the Moist, and *Stellæ Cadentes*, and Comets, and the like, above them, so probably other Tenuious and Invisible Vapors above them; and then also, according to their own assignment, there is but one Region of the Air; and they who assigne must prove that there are not any Meteors or Vapors above their Second Region assigned, which they can never do. But the truth is, that though the Æthereal Rays be Reflected from Earth to Æther, yet that Reflection both of Light and Heat, as all others, is stronger and longer as it is neerer, and weaker and shorter as it is farther from the Body Reflecting; as well as Emanation is stronger as it is neerer, and weaker as it is farther from the Body of the Inherent Quality which doth Emitt it: and so the Reflection of the Æthereal Rays from the Terraqueous Globe back again to the Æther is Gradual, and of different Degrees; and thereby doth Produce Different Degrees of Vapors, and several sorts of Meteors in several parts of the Air; and accordingly they attein several Situations therin; and by the Variation of many Circumstantial Causalitys the same Meteors poised therin almost as Glass Bubbles in Water are sometimes higher, and sometimes lower, and have no such Planetary Position in themselvs, as Starrs in Æther: nor is the Air so Invariable as it. The Spirit of Air is not Expreſt by any known Name, and I know not therefore well how to Expreſs it, unles we should call it, *Aura*: or the like. And indeed Philosophers generaly have so much attended the Gross Matter, and so litle regarded Subtile Spirits, that they have not so much as found out any *Vocabula* of the very Elementary Spirits, except only Fire, which is most Sensible both by the Heat and Light therof; though all the other Spirits be also Substantial Activitys, and have their Sensible Qualitys;

litys; which yet hath not been Determined concerning all the Elements, what are their first Proper Qualitys, as I shall heerafter shew, and particularly prove Cold to be the Proper Quality of Air, as Heat is of Æther. Also Air hath apparently another Quality which is Sound, and that is very Sensible, almost as much as Light; but is not so much consydered, becaus it is not so Permanent; and indeed Sound is farr more Desultory then Color, as I have said, for though Desultory Color is not, and can not be, Fixed as an Image can not be fixed on a *Speculum* (which if it could be, would Excuse and Exceed the Art of any Painter) yet it may be Continued in the same Position as long as you pleas: wheras Sound is alway Transient and Fugitive, as I shall shew heerafter, and can not be Continued one Moment, but is still in Succession, like Flame, and almost like the very Instants of Time. And yet as all the other Heavens are Hebraicaly Denominated from this first Heaven, Air, so also all Spirits from the Spirit therof, almost in all Languages. Air hath also a Mistion with all the other Elements as well as Æther, and perhaps more, as Water hath more then it, and Earth most of them all: and so it hath more of the Terrene Qualitys then Æther, and less then Water, as it hath more Refracting Opacity then the one, and less then the other; and so also more Consistence, then the one, and less then the other; and therefore is probably less Fluid then Æther, as it is apparently more Fluid then Water.

II. The Æther, as I have said, is most Rare, and probably can not be more Rarefied then it is in its own Element; and so the Earth most Dens, and can not be more Densified. And though I know not whether Æther may be more Densified, yet certeinly Earth may be very much Rarefied, as in Soot, Camphire, Salts Volatilised, and the like. But Water is most notably capable of Rarefaction into Vapors, and they are as much Condensated again into Waters, though I suppose it can not be so much Violently Expanded or Compress, and that Air can not be so much Condensated or Rarefied as it may be Compress or Expanded. And of all other Elements Air is most capable of Compression as in the Windgun, and of Expansion as in the Airpump: (which from thence may be rightly termed the *Expansor*) and from this Compression and Expansion therof there follows a Natural *Motus* or

Nisus

Nisus ad Restitutionem, or Resilience, which is now Superscribed with a new Title of Elasticity, though the Term properly signify rather Abaction or Pulsion then any such Return or Restitution, as is or ought to be Intended thereby, and in plain *English* is better termed Springines, which is more Proper to Compression then Expansion; though as it is Confusedly used for both, I am forced also so to use it, only for more clearnes and distinction I shall rather ascribe Elasticity to Fluid Bodys, as Air, and the like, and Springines to Consistent, as Steel, and the like. But heer I must Remind what I have formerly Observed, that there is a very great Difference between Rarefaction and Condensation which are Spiritual, and by Intrinsecal Generation, and Expansion and Compression which are Corporeal, & by Extrinsecal Violence: which Difference doth most plainly appear by this very Elasticity: for no Elasticity and Motion or *Nisus* to Restitution doth ensue from the former, becaus they are so Intrinsecaly Altered by Natural Generation; whereby the Predominant Spirit having in the Generation reduced the Body to a fit Rarity or Density for itself, doth so continue it as long as it doth Predominate; but only from the latter, when only the Body is by any External Violence so Expanded or Compresst, and the Predomination of the Spirit not Varied by Corruption, and therefore it reteineth still such an Actual *Nisus*; which, when the External Violence is removed, becomes a *Motus ad Restitutionem*. And yet both the former and the latter are generaly Confounded together, which hath so much Confounded the right Knowledg and Understanding therof: but being thus clearly Explained and Distinguished, will very much facilitate and clear our Discours therof. And this may evidently appear in all the Experiments of Rarefaction and Condensation, or of Expansion and Compression. As first in the Sealed Weather-glass, which is the true *Thermometer* without any Communication with the External Air, and accordingly with the Variation of the Density or Rarity of the Body therof; from which it is defended by being so Sealed, and is only Varied in itself by Heat or Cold, which are Spiritual Qualitys, Penetrating the Glass, or Operating upon it by their Emanant Contact, and consequently upon the Water, or any other Liquor within it (which whatsoever it be, we will generaly call Water) and if Cold have no Emanant Rays like Heat, yet it may, as I have shewed, Generate Univocaly a Potential Cold in the Glass, and so thereby

also in the Water by Producing the Potential Cold therof into Actuality (as also Sound which is another Quality of Air Mist in the *Compositum* therof may be so Produced, as I shall shew heeraster.) And therefore the Water in the Sealed Weather-glass doth not Fall in Hotter Weather, nor Rise in Colder, as in the Open Weather-glass, but Contrarily Rise in Hotter, and Fall in Colder Weather; becaus the Included Water being Intrinsecaly Rarefied by the Heat doth Extrinsecaly Compress the Air, which also would itself be Rarefied, and hath therefore an Intrinsecal *Nisus* therunto in itself; but yet is Compreſt Violently by the Water, which is more Dens and Robust in itself, and the Air more Rare and Tender in itself; and so again the Included Water being Intrinsecaly Condensated by Cold, doth Extrinsecaly Expand the Air, which also would of itself be so Condensated, and hath therefore an Intrinsecal *Nisus* therunto in itself; but yet is expanded Violently by the Water which is Condensated, and being more Prepotent, as I have said, doth so Expand and draw down the Air to fill the Space which it hath left, *Ne detur Vacuum.* Also if the Sealed Weather-glass be carried up to the Top of the highest Steeple or Hill, where the External Air is much more Rare then at the Bottom, yet the Water will not suddenly Fall, as in an Open Weather-glass; becaus the Water and Air in the Sealed Weather-glass have no such Communication with the External Air, and the Corporeal Rarity or Density therof; but is only Rarefied or Condensated by Internal Heat, or Cold; and that can not so suddenly be Produced in it as to make any such Variations: whereas in the Open Weather-glass, becaus it is Open, the External Air doth Corporealy Communicate with the Included Air, and so by Mingling with it doth suddenly Vary the Rarity or Density therof, as Vinegar Mingled with thick Ink, or the like: And therefore the Included Air is suddenly Varied, and sooner by the Rarity or Density of the External Air, then by the Heat or Cold therof, which require more Time Univocaly to Generate Heat or Cold in the Included Air, whereby it may be Rarefied or Condensated in itself: wheras if the External Air be Actualy more Rare, though more Cold (from other Circumstantial Causalitys, as in clear frosty Weather, or the like) the Included Air in the Open Weather-glass will also be more Rare; becaus, as I have shewed, it doth Communicate and Mingle with it; and so if it be more Dens,

Dens, though more Hott; as in a Minepitt, the Included Air will be also more Dens, for the same Reason; and consequently the Water will Fall in the former, and Rise in the latter Experiment, so that the Open Weather-glass is indeed rather a *Pycnometer*, as I may call it. Also in the common Experiment of drawing up Water in an Urinal or other Vessel by Flame, or heating the Vessel, assoon as the Actual Flame, which did Actualy Rarefy it, is Extinct, the Air is again Condensated, and the Water will ascend suddenly, (or more slowly if it be heated,) and afterward so Mingle with the External Air, and Participate of the Rarity or Density therof, like any other such *Pycnometer*; for so it stands at that Hight wherunto it hath Ascended, and will be Varied afterward as in any Open Weather-glass by applying Heat to the outside of the Glass, which will make it to Fall, and when that is abated to Rise again, and not stand afterward as low as it Fell, as it doth at that Hight which it atteined by the Calefaction before. And it is consyderable in this Experiment, that the Air is Rarefied so notably in the Glass by Flame or Fire within the Glass, together with all the Fume therof; and yet the Rarefaction of both, which is Proportionably as much in Extension as the Water which Ascendeth afterward, doth not Depress it below the *Stagnum* therof in the Basin; wherefore certeinly it must pass out of the Glass, (whose Neck is filled and closed with the Water therin equaly with the Levell of the Water in the Basin, as the Top of the Torricellian Tube is with the Mercury that is in it) by some such ways and passages, as I shall heerafter discover and declare concerning the Torricellian Experiment. And it doth not depress the Water below the *Stagnum* therof in the Basin, as Air Rarefied within an Open Weatherglass doth the Water therin below the Standard therof; becaus in this Experiment the Water not having yet Ascended above the Levell therof in the Basin, doth not Superpend, nor hath any such *Nisus* to Return downward or descend, as in the Open Weather-glass, or Torricellian Tube, wherin the *Cylinder* of Water, or Mercury, doth so Superpend upon and above the *Stagnum*, and therefore hath such a *Nisus* of Returning again Downward, as I shall also shew afterward. And so also in this Experiment, after the Water hath Ascended in the Glass, and hath thereby such a *Nisus* of Returning Downward again, if the Air above it within the Glass

be then Rarefied again by heating, or the like, the Water will fall as well as in any other Open Weather-glass, as I have shewed. And the true Reason heerof is not from any Natural Springe of the Air, or Abaction or Pulsion outwardly, as I before noted; becaus the Expansion is Violent and beyond the Natural Density of the Common Air, and the Restitution to it Inwardly Natural; as of bent Steel to its own Natural Figure: for that which is more Constant and Proper is Natural, and the other Violent. Wherefore also the true Reason why in this or any other Open Weather-glass, the Water doth not Return to its Levell (unles the Air within the Glass be Rarefied so farr) though it otherwise might, (not being Imprisoned, as in the Sealed Weather-glass) is, becaus this Elasticity of the Air Expanded by the Weight of the Descending Water doth keep it from Descending any farther then itself will be Expanded by the Weight therof: for so in the Tube of Water or Mercury Inverted, as they Descend, they thereby Expand the Air more, and they Weigh less; and so at length they both come to an *Æquilibrium*, between the *Potentia* of this Elasticity of the Air and *Pondus* of Water or Mercury; and then they both stand at that Hight; which we therefore call the Standard: and though the Included Air doth, as I have said, somwhat Communicate with the External Air; yet not so freely, but that it is still farr more Expanded by the Weight: And as the Included Air will be partly Rarefied or Densified according to the Proportion of the Rarity or Density of the External Air; so by the Expansion therof it may be farther Expanded, and by the Compression therof Compresst; which Produceth the like Effects therof in the Standard, but from a Contrary Reason: for though by Expansion of the External Air the Included Air and Water or Mercury will Fall, and by the Compression therof Rise, yet that is not from any such Intrinsecal *Potentia* as of Rarefaction and Condensation, but from the Extrinsecal Violence of Expansion and Compression drawing the Air and Water Outwardly toward that End whereunto it is applied, which is the *Stagnum*, whereby they must necessaril/ follow that way, and so Descend in Expansion, by drawing it up more the same way Outwardly or Upwardly from the *Stagnum*; and it must as necessarily Ascend by Compression. And so in the Air-pump or *Expansor* the Torricellian Tube and *Stagnum* being placed therin, by the Operation therof; which doth notably Ex-

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pand the Air Outwardly in the Receiver wherin it is placed, the Mercury in the *Stagnum* is thereby drawn Outwardly Upward, and consequently it must Descend Inwardly Downward in the Tube (as that Engine is said to draw up a very great Weight) and yet it Proportionably also draws the Included Air at the other End, though not so freely, and therefore not so strongly, nor can so Communicate with it as the Rarefaction of the External Air doth not so freely Communicate with the Internal Air, as I have said. And this I conceiv to be the true Reason of the Torricellian Experiment, and also of the Paschalian Experiment, which are the same Proportionably according to the Different Weight of Mercury and Water, and both of them Differ from the Common Open Weather-glass only in this, that they are Erected to the Highest Standard, which can be made of any such Experiments, wheras the Weather-glass is only a Partial Experiment; as when the Torricellian Tube is shorter then the Standard, yet the Mercury will stand at that Hight: but a Pump doth Correspond with the Paschalian Experiment, if it be as High; for the Water will not so stand therin above the Standard, though by Forcers and Buckets below the Standard, and the like, it may be raised higher, as the Waterwork at *London*-bridg; and I know a Pump neer the place where Idwell, which servs an houf with Water pumped up about fifty feet high, by making two Pump posts, wherof the lower is about two Inches Bore, and the upper about five with Poles, and a Bucket in it, and two Valvs at the Bottom of the Bucket and top of the lower Post. Also the *Siphon*, as to this Purpose, is only a double Pump or double Tube Inverted. But the great Wonderment concerning the Torricellian Experiment hath been, how the Air should come into the Tube, and Ascend above the Mercurial *Cylinder*; which first seemed so Impossible, as that it was generaly Proclaimed to be a Sensible Instance of Vacuity; though it doth as Sensibly Disprove it by the very Standard of the Mercury in the Tube, which therefore doth not Descend to its Levell in the *Stagnum* to prevent Vacuity; and also by Expansion of Bladder, and by the Light which appears in the Tube above the Mercurial *Cylinder*; which some say is a Body itself, but certeinly, though it be only an Emanant Quality, it can not Possibly Exist without a Diaphanous Body, as Inherent Light can not Subsist without a Lucid Body,

dy. Others therefore suppose it to be *Materia Subtilis*, or Æthereous Corpuscles, or somthing they know not what, which yet they will affirm upon all such occasions to fill Pores or Vacuitys rather then acknowledg the Truth and Evidence of the most Sensible Experiments: but though Æther doth send forth Emanant Rays every way, yet by its own Rapid Motion Circularly it prevents any such Excursions of its Substantial Corpuscles, or *Effluvia*, as certeinly would long since have Exhausted it, and made it no Æther, unles they can also find a way to Reciprocate and Restore them again, like Vapors to the Sea. But plainly and simply all that is above the Mercurial *Cylinder* in the Tube is only Common Air Expanded, as I have said; and may appear by all the *Phænomena* therof. As by the Vibrations and Subsiliences of the Mercury in the Tube when being stop'd with the Finger it is Inverted and sett in the *Stagnum*, which are not like the Undulations of the Surface of the Mercury in the *Stagnum* when it is afterward Moved, but farr different, and more Busy and Tumultuous, as you may easily perceiv, if after the Mercury is setled at the Standard, you so Move it by Jogging, which will cause a common Undulation, but no such Commotion as before; and so if you fill a Torricellian Tube half full with Water, and then stop it with your Finger, and Invert it; you shall see the Air heaving and striving in like manner to pass through the Water, and bearing up part therof before it to the top of the Tube; till at last the Air setleth above, and the Water beneath: and so if you leave some Air in the Torricellian Tube with the Mercury, or some Watery Bubbles (which commonly remain lurking in it whether you will or no) you shall see almost the same Vibrations and Subsiliences, and that is manifestly Included Air or Water, becaus they were so left in it before. But for a farther Evidence heerof, take another Tube close at one End, and of such a convenient Length and Bore, as that the Torricellian Tube may freely move and play in it (whence I shall call this other the Extratorricellian Tube) and setting it with the Close End Downward, place the Torricellian Tube so likewise with some small Supporter in the Extratorricellian Tube, that the Open End of the Torricellian Tube may be almost as high as the Open End of the Extratorricellian Tube, and then fill the Torricellian Tube so standing in the Extratorricellian Tube with Mercury; and afterward stop the Open End of the Extratorricellian

cellian Tube carefully with a Cork, or the like, and then ſuddenly Invert both together, and the Mercury will ſtand in the Torricellian Tube above the hight of the Standard; wheras if it were any thing but part of the Air Included in the Extratorricellian Tube, which by the Deſcent and Weight of the Mercury in the *Stagnum* Compreſt, it ſhould in this Extratorricellian Experiment ſtand at the ſame Hight as in the common Torricellian Experiment, which yet it doth not; but above it, becauſ a very litle of the Air, ſo very much Expanded, doth ſuffice to fill the ſmall Space above the Mercurial *Cylinder* in the Torricellian Tube, in this Experiment, and to ſuſpend the Mercury, and therefore when ſo much of the Mercury as before filled that Space doth after the Inverſion Reſtagnate in the Extratorricellian Tube, the reſt of Air which was Included therin is thereby Proportionably Compreſt, and by the Elaſtical *Potentia* of that Compreſſion bears up the Mercury and *Cylinder* therof ſomwhat higher then in the Torricellian Experiment; which doth Concurr with what I ſaid before, concerning the drawing down of the Mercurial *Cylinder* by Expanſion of the Included Air in the Receiver of the Airpump or *Expanſor*; for ſo contrarily the Compreſſion of the like Included Air in this Experiment doth bear it upward, (and plainly appears to be ſtronger then any pretended Preſſure of the Atmoſphere). And this may further appear if you open the firſt Cloſe End of the Extratorricellian Tube, for then the Included Air therin ſo Compreſt will iſſue forth with a litle Poppyſm, which is a manifeſt ſigne of the Compreſſion of Air; and then the Mercurial *Cylinder* will fall down to the uſual Standard. And yet more Viſibly if you carefully cloſe the firſt Cloſed End of the Extratorricellian Tube with a litle piece of Bladder, when both the Tubes are Inverted as before the Bladder will apparently ſtrutt, and ſtiffly riſe up, and not be born down by the Atmoſphere, as hath been ſuppoſed; and then the Mercurial *Cylinder* will not ſtand altogether ſo high as before, but proportionably lower, according to the more Space gained by the ſtrutting of the Bladder. And if the Torricellian Tube be Open at both Ends, and you ſtop one with your Finger beneath, and then it be filled with Mercury, and ſo you Invert it with your other hand, and place it in the *Stagnum*, it will notably Introſuct your Finger (which by the Inverſion will then be above it) in ſtead of Air, becauſ it is

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rext to the Mercurial *Cylinder*, and Weight therof; and yet it will also Introsuct Air below it to fill the Space above it; and all such Introsuctions are manifest Symptoms of Air Expanded, and not of any Vacuity, which as it can not Extrude, so neither can it Introsuct any Body, nor doth need any Body to succeed, as Plenitude doth; but those forcible Introsuctions are from that Elastical *Potentia* of a Body Expanded, which is to Restore itself to its own Natural Density, and other Successions of any Body against the Natural Motion therof are, as I have shewed, only to prevent Vacuity. Nor is such Introsuction any Pressure of the Atmosphere above the Finger, but most Sensibly only a Torture beneath it. Wherefore it is sufficiently evident that the Space above the Mercurial *Cylinder* is filled only with Expanded Air, which they who deny, do thereby shutt their Eyes against a very Curious Improvement which otherwise they might make therof by Inquiring farther how very subtily and strangely the Air doth pass into the Torricellian Tube so prepossessed with the Mercury. Which I shall now also consyder. And I can easily grant to others and my self, that it doth not nor, can it Possibly pass and Penetrate through the Extensive Body of the Glass or Mercury, becaus itself is also an Extensive Body, and two such severaly Extensive Bodys can not be in the same Place (which, as I have said, is only Extension in Relation to the Substance of the Body itself, which thereby is in such a Position and Place as it is, (in respect of all other Bodys in the Univers) nor can there be any such Penetration of Extensions, or two Extensions in the same *Ubi*, becaus it is the Position of the Extensions, and so there can not be two Positions of one and the same Extension, though by Condensation and Rarefaction, Compression and Expansion the Extension itself may be Varied, the Matter being the same, as I have formerly shewed, and doth plainly appear by these and all other Instances therof. Also I conceiv that neither the Glass which is a very Imporous Body, nor the Mercury which is Fluid hath any such Pores in itself through which the Air might pass without Penetration; but that the very great Force and Violence of the Introsuction, which I have before discovered, doth make Temporary Pores, or rather some pervious Passages, which are those very close and Indiscernible Strainers through which the Air doth pass in the Body of the Mercury itself into the Tube, and thereby is so very much

much Expanded. As when Boys blow through a Quill, or Cane, into Water, wherin there are no Pores before, yet the Force and Violence of that Blast doth make such Temporary Passages, whereby their Breath passeth through the Body therof in manifest Bubbles: so when a Drawer fills his Wine, out of a Pott held very high into a Glass below, some Air between is by the Fall dashed into the Wine, and appears therin in very small Corpuscles, (which he therefore calls Nitts) and again Ascend in small Bubbles standing on the Surface of the Wine: and so in the common Experiment of *Tobacco* taken through a close Vessell almost filled with Water, whereby the Fume of the *Tobacco* shall pass from the Pipe, through the Water, to the Mouth of him who so Introsucts it, which is very like the Introsuction of the Air through the Mercury by the Weight therof; and though the same Body doth Introsuct through itself in the Torricellian Experiment, which is also consyderable, wheras in all the others the Operation is by another; yet I do not apprehend this Diversity to make any Difference in the Reason of the thing itself: for so as there be a sufficient Force thus to Introsuct, it is all one whether it be by the Force of the same Body, or of another, or whether it be by a *Potentia*, or *Pondus*, and the Mercury, in the Torricellian Experiment, is putt into such a Posture, as it can not Descend with all the Weight therof, unles it first make way for another Body, that is, the Air, so to pass through it, and to succeed it, *Ne detur Vacuum*; which it doth, as I have said, by the very Weight therof, and so the Air passeth through it, though not without very much Resistance and Commotion, either by Indiscernible Bubbles, or some such Passages. And being so Introsucted by the Overweight of the Mercury, and to Prevent Vacuity the Weight of the Mercurial *Cylinder* below it is as if there were an Introsuctive *Potentia* above it, which might be sufficient so to Introsuct Air through it, as the Breath of a Man is sufficient to Introsuct it through a litle Body of Water, wheras the *Pondus* of the Mercurial *Cylinder* is farr greater then the *Potentia* of any Mans Breath. And the Mercurial *Cylinder* by the Weight therof doth very hardly Introduce the Air through or between the Body therof, and may be sett in such a quiet Posture as it will not so Operate, untill it be Jogged, and begin to Fall; and when it doth Operate the Passages through the Body therof are

opened with great Reluctance and Commotion; as Water by the Weight therof doth ſo open its own Body to let out Bubbles with an Ebullition and Undulation in itſelf; and ſo the Mercurial *Cylinder* plainly diſcovereth a very notable Commotion by the Ebullition and Undulation in the Surface and Top therof, which is to me a moſt plain Evidence of Air paſſing through it the ſame way, as it doth through Water; and ſo indeed it dothpaſs through Water in the Paſchalian Experiment: and if any may yet conceiv a Difference between Bubbles which are firſt forced into the Water, and ſo muſt neceſſarily paſs out again, or Fume Introſucted by another, and Air Introduced by the Water or Mercury itſelf, and the Overweight therof, let him try and ſatisfy himſelf with the other Experiment of filling a Torricellian Tube almoſt full with Water or Mercury, and then ſtopping it with his Finger (or if he pleaſ Hermeticaly ſealing it) ſuddenly Invert it, and he ſhall find that there will be both the ſame *Phænomena* Proportionably of the Commotions, and the ſame Effect at laſt of the Air Aſcending above the *Cylinder* of Water or Mercury, and of that Subſiding beneath it: and, as I have ſaid before, that the Space above the Mercurial *Cylinder* is and can be filled with nothing but the Air, ſo Included before in it; ſo in all theſe or in any other ſuch Experiments, the Air paſſeth into the Glaſs as it doth out of it in the former Experiment, and though the Air be Included in the ſame Tube with the Mercury in the Torricellian Experiment, yet in this laſt mentioned Experiment, when the Tube is Inverted, it is thereby placed beneath, and without it (though the Air were before in the Tube) as well as any External Air; and muſt ſome way or other paſs to Aſcend above and within the Mercury, which plainly it doth by the Weight and Preſſure of the Mercurial *Cylinder* itſelf; and ſo the Air Included in the Tube with the Mercury when the Tube is Inverted is by the Weight of the Mercury firſt Compreſt beneath, and by litle and litle Tranſmitted through the Mercury into the Space above it, whereby it is Expanded above, and then again Reduced to its former Denſity, which fills the ſame Space above, as it did beneath. And though I ſometimes conceived that the External Air might in the Torricellian Tube and Experiment paſs between the Glaſs and the Mercury, (as generaly Air will, if it can, paſs that way; becauſ thoſe two Bodys are only Contiguous and not Continuous,

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as the Water is in itſelf; and ſo probably ſome Air doth ſo paſs in the Torricellian Experiment) yet certainly it paſſeth alſo between or through the very Body of the Mercury by thoſe ſecret Paſſages which it ſo maketh, as may appear by the Commotion in the whole *Cylinder*, and more plainly by filling the Extratorricellian Tube with Water or Oil, ſo as when both the Tubes are Inverted, the Water or Oil ſhall ſtand above the Torricellian Tube, and every way Encompaſs and Drown both Tube and Mercury itſelf; and then let the firſt Cloſed End be opened at the Top of the Extratorricellian Tube Inverted, and the Mercurial *Cylinder* will Subſide to a Proportionable Standard (accounting alſo for the Overweight of Water or Oil) as in the firſt Experiment, wherin only Air was left in the Extratorricellian Tube. Wherefore I apprehend it ſo to paſs through pervious Paſſages of the Water or Oil, and alſo of the Mercury, and that the Proportionable Weight of Water in the Paſchalian Experiment is Equivalent to the Weight of the Mercurial *Cylinder*, and doth Expand the Air Percolated through it as much: and ſo the Air which is ſo Expanded, when it is above the *Cylinder* by that Elaſtical *Potentia* therof doth Suſpend the like Weight either of Water, or Mercury below it; which after they come to an *Æquipotentia* of the one, and *Æquipondium* of the other, Equaly and Mutualy Correſponding one with another there and then reſt and ſetle in their Standard, without any more Commotions and Vibrations. And though the Mercurial Tube be never ſo Long, yet the Overweight of the *Cylinder* will have the ſame Operation and Effect Proportionably; And ſo I ſuppoſe, that if the *Stagnum* of the Mercury were never ſo Deep, and the Torricellian Tube were plunged in it with the Orifice downward, and any Air left in it, or not, and then drawn upward to any Hight whatſoever, yet it ſhall never be raiſed above the Standard, nor ſhall the Air be ever the more Expanded, though there may be ſeveral Degrees of the Expanſion therof beneath the Standard. And the Torricellian Experiment when it is finiſhed, is alſo a Weather-glaſs, and will Riſe and Fall as well as a common *Pycnometer*, (but ſomwhat otherwiſe, and not ſo much in Meaſure) by Communication of the External Air with the Internal in the Torricellian Tube, as well as any other open Weather-glaſs; and I therefore conceiv, that the pervious Paſſages between the Glaſs and Mercury, and per-

haps alſo in the Body of the Mercury ſtill ſtand open to the Subtile and Imperceptible Air therin, and which doth ſtill Intervene between the Internal and External Air, whereby they ſo Communicate one with another; And ſome have obſerved litle Noches or Inequalitys of the Surface of the Mercurial *Cylinder* at the hight of the Standard after the Torricellian Experiment is finiſhed, which ſeemeth to be a Perceptible ſymptom heerof. And thus I ſuppoſe that there is the ſame Reaſon Proportionably of the Weather-glaſs, Pumps, *Siphons*, the Paſchalian, and Torricellian Experiments, and the like, from the Expanſion by the Weight of Water or Mercury and Elaſtical *Potentia* of the Air itſelf, by Retraction and not by Pulſion, or any Preſſure therof, which they do no more prove, then they did prove the preconceived Opinion of Vacuity; and yet Men are ſo Fond of their own Fanſys that they would perſwade not only other Men, but alſo Nature and Experiments themſelves, to be of their Opinion, and thus have very Confidently Inſcribed on the Torricellian Experiment the Title of a *Barometer*; ſuppoſing the Atmoſphere to preſs down the *Stagnum*, and ſo to raiſe the Mercurial *Cylinder* in the Tube to the Standard therof; wheras in the Extratorricellian Experiment after the Firſt Cloſed End is opened and the Atmoſphere admitted the Mercurial *Cylinder* doth Subſide; and ſo certeinly the whole Preſſure therof can not be ſo much as the *Potentia* of the litle Compreſſion of Air in the Extratorricellian Tube before mentioned. Thus the Torricellian Experiment is grown famous only by certein Errors affixed to it, rather then by any Senſible Truth gained thereby, more then formerly; it being in itſelf, only the utmoſt Extent of a Weather-glaſs, and *Epitome* of a Pump.

III. The Firſt or Principal Quality of Air is Cold, as Heat is of Æther, which being Contrary do Mutualy Temper one another; and thereby alſo preſerve the Body of Water, that it ſhould not be wholy Reſolved into Vapors by the Emanant Heat of Æther, nor Congeled into Ice by the Contact of the Cold Air, and both of them do extend the benefits of that Temperature to the Earth, and all the Vegetatives and *Animals* therin. But becauſ ſome deny Air to be Cold, before I proceed any farther, I ſhall prove it. I know not that ever any denied or doubted Heat

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to be the Proper Quality of Æther or Fire, which also the Text doth imply, becauſ it is Synonymous and Connatural to Light, and belongs to the ſame Element, though Light be only mentioned for all the other Qualitys of Æther from another ſpecial Reaſon, which I have already declared. And expreſsly Drines is the Proper Quality of Earth, which is therefore in the Text Eminently called the *Arida*; (and ſo alſo our Saviour calls it in the Goſpell) that is, the *Primum Aridum*. Wherefore either Air, or Water muſt be the *Primum Frigidum*; but Water is apparently moſt Moiſt, and ſo is every where termed in Scripture, and by all Mankind (except ſome Philoſophers) And that Air is moſt Cold was the antient Opinion of *Pythagoras*, and afterward of the Stoikes, and may be proved by that very Argument whereby the Peripatetikes would eſtabliſh the contrary Opinion, which is their Syzygy of the Elements, and their Fower Firſt Qualitys; for they ſay Air is moſt Moiſt, and therefore Water is moſt Cold, and ſo prove one Error by another; wheras by the very ſame Induction I prove Air to be moſt Cold; becauſ that which themſelvs aſſigne to be moſt Moiſt, that is, Vapor, is plainly Water Rarefied, and not Air, nor like it in any thing, but only in Corporeal Rarity, which is very different from all Spiritual Qualitys; and that Vapor is Water, and not Air I ſhall evidently prove heerafter. Alſo it doth very Senſibly appear by Wind or the Motion of Air, which Cooleth, and if it be not Vaporous, but Pure and Clear Air, though moſt Cold, it drieth rather then Moiſtneth: though, as I have ſaid before of Heat, Drines, or Moiſture, are not Congenerous with either, but Indifferent between both it and Cold, and may accompany one or other, according to Circumſtantial Cauſalytys. But when Air is moſt Vaporous, it is commonly moſt Tepid; as appears by South Winds, and the Surface of Water, which is next to the Air, and is ſooneſt and moſt Congeled; wheras Subterraneous Springs are never Congeled, like Subaereous Rivers; but are rather obſerved to be Warmer in Winter, and Cooler in Summer, though perhaps not Poſitively, but Comparatively; and probably Earth hath more Miſture of Æther, and Water of Air, and ſo Ice which is Congeled, and Actualy moſt Cold, is Actualy moſt Aereous; whereby, as they ſay, it is more Expanded, but Properly Rarefied: Yet Water hath generaly ſome Actual Cold in it, as

may appear by Washing, and especialy by Laving or Waving the Hand in it, which Motion doth more Actuate the Cold of Water, as Winds do Actuate the Cold of Air: though as Heat in a Burning Glass doth not Instantly Burn, so Cold which is less Active, may not suddenly Cool; and being Mingled with Vapor in all the Atmosphere, the Air is thereby Tempered, and doth Cool less: and from many such Circumstantial Causalitys the Activity therof may be much abated. And though it be generaly Actuated by Motion, yet it is not therefore Motion, as I have said of Heat, and therin also proved Cold not to be either Rest, or Motion formaly in itself: and though Heat generaly caus some Motion, yet Cold may be without any Sensible Motion; as in Ice, wherof the whole Body, and all the Parts therof *per omnia*, are Consistent and Immote. And there may be a very notable Motion and Commotion, without any notable Variation of Heat or Cold, as if the Torricellian Tube be filled almost with Mercury or Water and some Air left in it, and then stop'd with your finger, and suddenly Inverted, as I before mentioned, you shall observ a very notable Commotion in the Ascent of the Included Air through the Body of the Water or Mercury, almost like the Commotion that appears in the Dissolution of Metalls by *Aqua fortis*; and yet no notable Variation of Heat, or Cold; which plainly shews that the notable Heat in the other is not from the Motion, but rather the Motion from the Heat, as heer it is from the Weight: and so Motion being a Common Instrument both of Bodys and Spirits, is Caused by any of them, and sometimes doth Caus them Equivocaly; but is not Univocaly in itself any other thing then Motion, as I have shewed before generaly, and shall still proceed to shew particularly in every thing which may Colorably be suspected to be only Motion. Now though Æther and Air be the more Active Elements, and Water and Earth less Active; and consequently the Proper Qualitys of Æther and Air, which are Heat and Cold, more Operative, and of Water and Earth, which are Moisture and Drines, less Operative; yet they also again Differ among themselvs; and so Cold is less Operative then Heat, and Drines then Moisture. Thus Heat by Contact, or otherwise so Intens as to prevail against Cold, doth sooner overcome it then Cold Heat; as Fire Warms the Ambient Air almost Instantly; but the Ambient Air doth not so suddenly Extinguish Fire in

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Iron Candent: and though it prevail so farr against Flame as to to destroy the Individuality, yet it can not prevent the Successive Generation therof. Nor did the *English* or *Dutch*, who Winter'd in *Groenland*, or *Nova Zembla*, find their Fires or Lights to go out in the Coldest Seasons. And in their *Antiperistasis* and Conflict, Cold doth more Excite and Provoke the Potential Heat, then Heat doth Cold; for so it makes Flesh to Burn and Blister, and *Nive perustus* is no such Improper Phrase: but when the Cold overcomes the Heat, it Mortifys and causeth Gangrenation; which is sometimes prevented by applying a more Moderate Cold, as of Snow, or the like; which doth not Profligate, but rather Excite and Recover the Internal Heat again. Thus though the Proper Effects of Heat be to heat, and of Cold to cool, yet by *Antiperistasis* they may Produce Contrary Effects, which plainly shews that there is such *Antiperistasis* in Nature, and not only in Notion. Also from other Circumstantial Causalitys they may Produce other Collateral and Consequential Effects, as I have already observed of Heat. But wheras Heat first Rarefieth and then Condensateth, contrarily Cold first Condensateth, as Water in the Sealed VVeather-glass by the Frigefactive Power therof, and so also in any Open Water; and then Rarefieth by the Congelative Power therof, as in Ice. And as Metalls Swell and are Dilated by Heat in and before Fusion, and Contracted again by Cold, so Ice is Dilated by Conglaciation and Contracted again by Melting. And wheras Cold doth not Conglaciate Bodys Actualy Cold which have much Potential Heat in them, as Sack is hardly Congeled, and so some very Hott Spirits, and Oils, and the like; it plainly proves Generation to be only the Production out of Potentiality into Actuality. Also Cold may thus not only Congregate Heterogeneous things by Conglaciation, which doth Constipate them in the Consistence therof, but also Segregate them, as Saltwater frozen is more Insipid, and I suppose that which is not frozen is thereby rendred more Briny. And thus also it may Segregate Homogeneous things, as Stones, and the like; which may Crack and Break with Cold, as well as Heat: but I esteem this to be rather a Discontinuation, then a Segregation. And so generaly it renders Bodys more Fragile; as Ice, or Petrified Bodys, Glass, and most notably Steel suddenly Cooled; and so any Iron is more Britle in Frosty Weather;

ther; and Physicians observ the like of Bones of *Animals*. Thus also Cold is a Dissolvent as well as Heat, and doth caus Vitrification and Crystallisation sometimes suddenly; and I suppose might Effect more by long and Mature Generation, if it were tried; for though it is not so strong and quick a Generator as Heat, yet as a weaker Magnetical Virtue by long continuance doth Produce Magnetism in other Bodys; and Violent Tension of a Springe of Steel, if it be long continued will by Degrees overcome the Elastical *Potentia* therof, and make the very Spirit to Conform to that Figure of the Body; so there are many neglected Operators in Nature, which though more weak and dull may in longer time Produce very notable Effects.

IV. As Æther Produceth Color, so doth Air Sound; which yet as the other seemeth to me to be no Simple, but a Mist Quality. And though it hath been antiently observed that Color is Mist of Light and Opacity, yet no notice hath been taken of any such Misture in Sound, which is the great Instrument of Human Speech and Discours, and yet there is none of those other Sensibles, whose Intrinsecal Nature is less known unto us. And I I find it very difficult farther to explain any thing therof, becaus I want even Common Terms, and words whereby to expres my Conceptions. I have already proposed generaly, that as Earth hath some Proper Qualitys, as Consistence, and Magnetical Virtue, whereby to Fix itself; so it hath also other Connatural Qualitys in itself, whereby it doth Fix the more Agile Qualitys of the other three Fluid Elements, which also require their Contrary Qualitys, wherewith to be Mist and Contemperated, as well as the fower First Qualitys. And thus we have discovered Opacity to be a Simple Quality Contrary to Light, and that by the Mistion therof Color is Produced. And that as Light is an Æthereal Quality, so Opacity is a Terrene Quality; as plainly the Earth is most Opacous, and there are no Fixed Colors without some Terreity, and the most Fixed are in such Bodys as are also Consistent. But yet I fear to seem too Curious and Novell in asserting any such Analogy in Sound; however, as I have promised, I shall adventure, and make a farther Essay therof. And according to the best Musical Terms that I know, shall call the two Simple Contrary Qualitys, which I conceiv to be the Principles of Sound,

Sound *Acutum* and *Grave*, or Shrill and Flatt: wherof Shrilnes is the Aereal, and more Agile Quality; and Flatnes the Terrene, and more Fixative Quality: or if we will accept of *Latin* Terms Analogical to Light and Colors, we may call a Sound or Voice wherin Shrilnes doth Predominate, *Vox Clara*; and wherin Flatnes, *Vox Fusca*: but as Pure Light or Pure Opacity are not Visible, so I suppose Pure Shrilnes, or Pure Flatnes, are not Audible, nor indeed that they can Actualy Exist in their own Simple Extremitys. And as Light is not the least Degree of Opacity, nor Opacity of Light, but Different and Contrary Qualitys; so that which I intend by *Acutum* and *Grave*, and their Shrilnes and Flatnes is no Degree; as Tones or the several Notes of the *Gamut*, and the like, but Contrary and Different Qualitys. Yet I also observ one general Difference of Degrees between Color and Sound, that is, as all Fixed Colors have a notable Degree of Terreity, which fixeth them, and Desultory Colors less; so Sound, which is only Desultory and Momentaneous Individualy, as I have said, requires a less share of Terreity then Desultory Color, though it be commonly Produced by Collision of Terrene Bodys Originaly. And as Fire Produced by Collision Originaly may fire a whole Train of Gunpowder Successively, so doth the Original Collision Produce Sound, that is afterward Continued by its own Spiritual Quality, which is alway Potentialy in all the Air, and Actuated by such Collision of the Air, which hath also, as I have said, some Earth in the Mistion therof, as well as the other Elements (and as we may see Terreous Motes and Corpuscles to float therin). And it is so Produced Instrumentaly and Equivocaly by Motion, or rather Commotion; for as the Original Instrument therof is Collision, so the Immediate Caus of any Sound is the *Tremor*, which is only caused by Commotion. Wherefore Æther and Planets though most Swift Movers, yet becaus they Move in Fluid Ambient Bodys most Equaly, and thereby make no Commotion therof, therefore also they make no Sound, or Noise, or Pythagorean Musike: yea Aqueous or Terreous Bodys so Moving in Air, make litle or no Sound; as a *Stella Cadens*, Snow, Rain, Hail, in the fall before they come to the Earth: so a Round and Smooth Bullet, that is not hollow, shott from a Gun makes no Proportionable Noise, becaus by the swift Motion therof it preventeth the Resistance of the Air, as I have

ſaid, and ſo maketh litle or no Commotion therin; wheras a Rod, or Whip, by a Smart Percuſſion of the Air Reſiſting it, and thereby ſuffering a Commotion, maketh a notable Sound; and eſpecialy Thunder, which ſuddenly breaking out of the Cloudy Meteor teareth it aſunder, every way, and daſheth it upon the Air, and by ſudden Expanſion of the Inflamed Lightning maketh ſuch a Terrible Report (like the Flame of Gunpowder out of a Gun) and ſo fluid Bodys by mutual Reſiſtance, and by the ſudden Impulſ that will not ſuffer them to Mingle peaceably, make a Violent Commotion, and Produce Sound; as Water ſuddenly daſhed againſt Water; wheras in a gentle Flux and Mixture it makes litle or no Commotion, or Sound. But to Continue the Sound, there muſt be a Continued *Tremor* in the Solid Body, as Bells, Strings, and the like: and where there is no ſuch *Tremor* Originaly by Commotion, there is no Sound, as I have ſaid; as in Collition of Wooll; and if it be not Continued the Sound ceaſeth; as by ſtopping a Bell. But any *Tremor* of a Body in the outward *Superficies* therof, may ſo cauſ the Sound to be heard without the Body; as is reported of the *Ætites*, and of a Bell of Gold being Cloſed round with a Stone, or Clapper, within it; and ſo Commotion under Water, which makes a *Tremor* alſo in the *Superficies* therof, may cauſ a Sound to be heard in the Air; though alſo Water and Ice, Glaſs, and the like Terraqueous *Compoſita* have much Air, as well as Earth, in their Miſtions and ſo may be Proportionably capable of Sound, which is Miſt of the two Simple Qualitys, Proper to Air, and Earth. And though this *Tremor* is the moſt Notable and Immediate Inſtrument of Sound, yet the Multiplication of the Sound in the Air is, as I have ſaid, only of the Spiritual Quality itſelf ſo firſt Actuated thereby without any more Commotion. And indeed Sound doth not cauſ any ſuch Undulation or Waveing therof up and down, like Circles in a Pond, as hath been ſuppoſed. Much leſs is Sound or Voice, though Articulate, any figuration of the Air, or Carving therof into Characters, like written Letters; for then we could not hear two ſeveral Sounds together, as we may if they be very Diſſonant; as of a Voice and of a Muſical Inſtrument; or any one Sound of one of the Voices in Conſort by attending more to it then to others: and certeinly ſeveral Auditors may ſo attend to, and hear ſeveral Voices: for the

Figure

Figure of the one Interſecting the other would thereby Diſſigure and Deface one another. Nor could an *Echo* then return any Articulate Voice, when the Figured Air is daſhed againſt a Concave Bank or Wall, unleſs the Bank or Wall had alſo ſuch Organical Parts, whereby to Figurate it again, and ſo Return it: but only the Air as I have ſaid, having the ſound Actuated in it, and being Reverberated, doth Return it with the Sound in it; which is by a Stop therof, as it may alſo be Diverted by Wind. And in an *Echo* we only Hear the laſt Word Becauſe it is laſt, for the precedent Words by that Stop being overtaken by the following are ſomwhat drowned, as the laſt is not. Nor do great Winds or Wafts of the Air cauſ Proportionable Sounds, unles they Collide the Air againſt Trees or Houſes, or the like, whereby they cauſ ſuch a *Tremor* in it; wheras the Motion or Undulation of the Air in itſelf, cauſeth neither *Tremor*, nor Sound. And the Sound or Voice is Continualy Propagated in the Air by the firſt Sound or Voice Actuated in it: and ſo doth paſs away continualy; and as it is ſaid, *Neſcit Vox miſſa reverti*; nor can the ſame Voice (otherwiſe then by an *Echo*) be heard twice by one man, unles he could fly away Faſter then it, and hear it again, as another man doth at a farther Diſtance, which is Impoſſible: for it is very ſwift, though not like Emanant Light of Lightning, which is ſeen before we hear the Thunderclap, and if we eſtimate the diſtance of the Thunder cloud and different Space of Time, between the firſt Sight of the Flaſh, and Hearing of the Clap, we may partly judg of their different Velocitys. Alſo Sound is very Longinquous, though not ſo farr as Light Emanant: Broad ſides in a late Naval Batell have been heard an hundred Miles from the Place. Nor is Sound Emanant, but always Inherent, though never Immanent, but Tranſient, and therefore hath no Refraction, nor Reflection of itſelf; but as the Air (in which it is Inherent) is only Moved by the Wind, which yet doth not wholy Divert it; becauſ it is ſo ſuddenly Propagated in the Air, and Penetrateth and paſſeth away more ſwiftly, then the Body of the Air can Move in itſelf by any Corporeal Motion: and it is Reflected in an *Echo* only by the Reverberation of the Air itſelf; otherwiſe it terminateth and abateth itſelf by leſs and leſs Degrees. And yet while it continnes, it is not Spent, or Exhauſted by Hearing, as Odors,

and Sapors, which are more Groſs, and more Immerſed in the Vapors, and Liquors, therof; but a whole Army of Soldiers may all Hear the Oration of their General: which alſo plainly ſheweth it not to be any Figurative, or Corporeal thing, but a moſt wonderfull Spiritual Quality; which ſucceſſively and by Innumerable Propagated Individualitys ſo conveys itſelf to the very Organ of Hearing, yet not corporealy ſtriking upon the *Tympanum* therof; as Anatomiſts generaly ſuppoſe, and ſo alſo call ſome Internal Parts of the Ear by ſuch Significant Names, *Incus* and *Malleus*; for plainly in Hearing we do not Perceiv any the leaſt Commotion or *Tremor*, but only the Spiritual Quality itſelf, which is the Proper Senſible and Object of the Senſ; and if we feel any Commotion, as in diſcharging a Gun neer to the Ear, that is only the Waft of Air which the Ear feels, as any other Part of the Body alſo may by the Senſ of Feeling, but doth Hear only the Vehement Senſible of Sound by the Senſ of Hearing. Nor yet are there any Rays of Sound as of Light, ſo to convey unto the Senſe the Image therof, and ſo ſeveral Images to ſeveral mens Senſes; but only the ſame Spiritual Quality is ſo propagated *per omnia*; which is very Admirable and Curious, and deſerving more Notice and Conſyderation then Philoſophy hath hitherto beſtowed upon it. Alſo ſeveral Sounds do Penetrate one another *per omnia*, ſo as to Convey the whole Sound in every Point of the Air, and to every Ear within the Sphere therof, and not Confound any of them ſo being Inherent in the Air, which yet is not only Directed by the Breath of the Speaker, and the like, but alſo Diverted by Winds, and Reflected by *Echo's*: and ſeveral Sounds ſeem ſomwhat to hinder and Interrupt one another, if that be not rather an Infirmity of the Senſ, then any Confuſion of the Senſible Qualitys, as the Ey can not ſo diſtinctly See ſeveral Viſibles, though certeinly the Images therof do not Confound one another. And as Spiritual Magnitude, or Ampliation by Multiplication of ſeveral Parts into one Total, doth, as I have obſerved, Augment the whole beyond the Proportions of the Particulars; ſo many Sounds together are Heard farther then any one of them Singly; as a whole Broadſide, or Cry of Hounds; like a great Mountain, which is farther Viſible in the Whole then any Part alone could be Seen. And Sound reflected at a great Diſtance is heard

better

better then Directly, b' best neer to the Reflection (like Reflected Rays of Hea' r Light) becauſ though the Reflection doth not make a' new figuration of the Sound or Voice, yet it doth Return and Reduplicate it ſo Generating itſelf Succeſſively in the Air, as I have ſhewed. But the greateſt Myſtery and *Incognitum* is, how the Air which plainly is not Configurated or Effigiated by Sound or Voice, but only putt into ſuch or ſuch a *Tremor* by the firſt Colliſion therof, whereby the Sound or Voice is firſt Actuated and Specificated Equivocaly, ſhould afterward Univocaly Generate it in itſelf Succeſſively without any more Colliſion Commotion or *Tremor* in itſelf. For there ſeemeth to be none ſuch afterward in the Air; as you may try by a Flame of a Candle or the leaſt Feather hung by a Thread in an upper Chamber, and let the greateſt Sound, or Noiſe, be made under the Chamber window in the open Air, ſo as the Chamber be not ſhaken, nor the Waft of Air come toward it, but go the other way from it; which, as I have ſaid, doth not at all concern the Sound: and then obſerve whether there be any Motion or *Tremor* in the Flame or Feather, more then would be without any ſuch Sound or Noiſ: certeinly it will not be in any maner Proportionable to the greatnes of the Sound or Noiſ, as it ſhould be if it were the very Sound or Noiſ. But I ſhall not Penetrate any farther into this very Curious Secret of Nature, nor Pronounce what Sound is Particularly; only Affirming it generaly to be a Spiritual Quality, and not any Corporeal Motion, though it be alway firſt Equivocaly Generated by Motion, which is therefore ſo Concomitant and Inſtrumental in it, and perhaps more Neceſſarily Antecedent then in Hear, or any other Quality whatſoever. Yet we muſt carefully Diſtinguiſh, as I have ſaid, between the very Eſſence and Formality of any thing, and any moſt neceſſary Inſtrumentality therof whatſoever; otherwiſe we ſhould know no Difference between our own Bodys and Spirits in this Conjunct State therof. And whoſoever will not ſo Diſtinguiſh between the Spiritual Quality of Sound (which is a Proper Senſible and the firſt Colliſion Motion and *Tremor* which is only the Equivocal Generator therof, though alway neceſſarily requiſite as an Inſtrument, and yet, in itſelf hardly ſo much as a Common Senſible, nor Perceptible in and with the Sound by the ſame

Senſ of Hearing) ſeemeth to me to be like unto him who affirmed that he could play upon the Organs, and upon farther Examination it was found that he could only blow the Bellows. Wherefore that we may better conſyder all togethe[r], and carry on this great queſtion concerning Motion throughout, we will Recollect what we have ſaid before, and now alſo add this unto the reſt; And ſo ſuppoſe, as we may very well, the ſame Air to be *per omnia* Tepid, that is Hott, and Cold, and alſo Luminous, and now alſo Sonorous, at the ſame Time, yea to have many Viſible Images and Audible Sounds Penetrating one another, and all that Body of Air wherin they are in every point therof; and if any Human Invention can find out and aſſigne ſo many ſeveral motions, as all theſe and ſome more, which I ſhall heerafter alſo add in one Body *per omnia* Puncta therof, and in the ſame Inſtant, he may perhaps alſo Move me from my preſent Judgment and contrary Opinion.

V. The Aery *Expanſum*, which was made to be the Common Paſſage between the Æther and Terraqueous Globe Tranſmitting Æthereous Rays Downward, and Aqueous Vapors Upward, hath no Proper and Fixed Inhabitants in itſelf, but only Vapors or Waters above, and Meteors, which Move up and down, like Birds flying in it; wheras the Æther hath Starrs, and the Terraqueous Globe is the Native Country and Region of Various Elementary *Compoſita*, Vegetatives, Senſitives, and of Man himſelf. Nor can I conceive that all theſe Unneceſſary and Deformed Meteors, which now appear in the Air, were ſo in it when it was firſt made, or before the Fall of Man; for whoſe ſake, not only Earth, but all the Elements were Accurſed; and that Curſ hath produced many Senſitive *Anomala*; and not only Briars and Thorns, but alſo Inundations, Meteors, Comets, and all the Imperfections Monſters and *Anomala* of Nature, which was firſt made Perfect and truly Natural: and we only read of Vapors then in the Air which are the Natural *Effluvia* of Water, (as Rays are the Emanations of Æther) and moſt wonderfull *Menſtrua*, Vehicles of Spirits, and Inſtruments of Nature; and it is ſaid expreſly that the Exceſs therof, which is Rain, and which otherwiſe may ſeem moſt Needfull, and leaſt Noxious, was not then in the Air, and that, *God had not yet cauſed it to Rain upon the*

the Earth, which was Watered only with Vapors and that, *There went up a Mist from the Earth, and watered the whole face of the Ground*; and so also supplied the Fountains Springs and Rivers of Fresh Water. Wherefore, as I have before Ingaged, I shall now plainly prove Vapor to be only Water Rarefied, and not Air. It is expressly so termed in the Text, Waters above, in respect of the other Elementary Water or *Waters beneath*. And it is Demonstrable that it is so, becaus it hath all the Propertys of Water, and none of Air, except only the Corporeal and Common Affection of Rarity; but as Air if it be never so much Rarefied or Expanded, yet doth not therefore ceas to be Air, so neither Water Rarefied into Vapor, to be Water. Also it is not, as I have said, so Cold as Air, but rather Tepid; nor so Diaphanous, but Refracts more; nor so Sonorous, for any Voice is better and farther heard in Sude and Serene Weather, then in Mists and Foggs; and it is confessed by all that it Moistens more then Air, which is the true Property of Water. And we have most Sensible Experiment int he ready Return therof into Water, as well as the Efflux therof from Water, which is only by Condensation and Rarefaction, and no Transpeciation. Certeinly we may as well affirm Ice to be Earth, as Vapor Air. Nor are all those Bubbles which appear in Expansion of Fluid Bodys always Air, as is supposed, but commonly Vapor; and therefore have a greater aptitude to be Imbibed by Dry Bodys, and to Insinuate themselves into them more then into Pores, into which Air doth more readily enter; and they stick longer to Glas, Stone, Metalls, and the like, then Air; and Moisten more; with many such Symptoms, whereby they may be Discerned, being in themselves of very Different Natures. And we must also Distinguish between Vapors themselves, which are either Produced by the more gentle and Calefactive Power of Heat, and were, as I have said, so made in this Second Day, and readily Return again into Water; as in Rain, or any Distillation, and still continue Actualy Moist; and these Vapors are also more Fluid, and only Conglomerate together with litle Consistence in more Dark Mists and Foggs in the Air, such as we see to rise from Rivers and Vallys in a Morning, or Evening; yet they are not Common Elementary Water or Waters beneath, but Waters above; which therefore

are

are so easily Trasmuted, Neither are Clouds any Cisterns, Membranes, or Sponges, conteining Rain; for indeed Rain-water is such a Ponderous Body as could not Possibly be Suspended in the Air, but would fall down in Cataracts, and destroy the *Terricolæ*; wheras these Vapors being suddenly Rarefied by Heat, and as suddenly Condensated again by Cold, or Compresst by Wind, do accordingly Descend leasurely in greater or less Drops, and the main Body therof is in the mean time carried about to Water a greater Space of Ground; and so Dews, which are Vapors not drawn up so forcibly, nor so high, (commonly by the Nocturnal *Tepor*,) soon fall down again upon Trees and Herbs, and are there collected and hang in Drops. And if the Air be very Cold, whereby these Moist Vapors are Congelated, then accordingly they either fall in Hail (as Icicles, and *Stiriæ* in some Cold Caverns of the Earth) and by their very Stillicidation and Agitation are formed into such Corpuscular Figures, which could not be, if they had ever been one Intire Body of Ice in the Air. And if the Cold be not so Intens, and the Vapors much Agitated before and in their Congelation, then they are turned into Snow, which is only frozen Spume, and being a Lighter Body is therefore longer Suspended in the Air, and there Congeled in whole Lumps as appears plainly in the Alps, but falling lower in our lower Regions breaks into Flakes. And Dews which do not Ascend higher are turned into Frosts. Or there is another kind of Vapor Produced by the more Violent and Caustike Power of Heat, and which is Burnt and Adust thereby, and therefore we call it, Fume, or Smoak; which is more Desiccated and Consistent, and hath such Terrene Qualitys, wherwith Water is Mist, Actuated in it; and so will continue longer, and is rather Actualy Dry then Moist. And there are some such Dry Mists lower in Summer; and they portend Dry Weather commonly; And of these Fumes are the Bright Clouds (which indeed are more Properly Clouds, and have a particular Name in Hebrew) Composed; and they are usualy higher in the Air then the others, being so raised by the greater Heat, and so the Sky is also Expreft by their Name. And more moist Thunderclouds which are of the other kind and usualy Resolved into Rain are lower then these Bright Clouds, and many times go one way while the others go another way.

But

But I ſuppoſe that theſe Bright Clouds (which are therefore ſo called becauſ they do more Equaly Reflect the Sun beams like a Molten *Speculum* as hath been ſaid) commonly are not Reſolved into Rain, and therefore are termed *Clouds without Water*, but that according to the Hebraical Etymology by farther Concoction and Condenſation or Compreſſion and the Agitation of the Air they are at length broken and Comminuted into thoſe litle Bodys or Pulviſcles which we call Motes, and are Viſibly ſeen in Sun beams, and continue ſo in the Air floating up and down longer then any duſt of the Earth (or, as the Poet calleth it, Cloud of Duſt) which almoſt as ſuddenly falleth as it riſeth; Wheras theſe being more Fuliginous and Light do wander up and down much longer; though at length they alſo Deſcend and Subſide on the Earth, otherwiſe they ſhould clogg and choak the Atmoſphere; which yet is uſualy repleniſhed with them, and we drink them in continualy as Horſes do Mudd the Water to thicken it; And ſo Fiſhes Introſuct Air, which contrarily doth Temper their more Denſ Drink and make it more Thin, and which they ſuck in and through the Water, as I have ſhewed in the Torricellian Experiment, and when they would ſuck it in more freely come toward the Top of the Water, whereby the Air in the Introſuction therof paſſeth through a leſs Strainer, and they cannot long Live without ſome Introſuction of Air; as appears in Ponds frozen, wherin we uſe to break Holes in the Ice for that purpoſe; and accordingly the Fiſhes come to them, even to the very Top of the Water, to Refreſh themſelves with the freſh Air, which they there Introſuct, and are ſo greedy of it, or ſick for want of it, that they are eaſily taken: though alſo ſeveral ſorts of Fiſhes require ſeveraly more Rare or more Denſ Drink, as River fiſh will be ſtifled with Mudding the Water, and Seafiſh grow faint in freſh Water, and the like. And indeed our Atmoſphere is not nor may not be pure Air, as is found by them who have been in the Tops of the *Andes*, and by the Experiments of Birds and Beaſts in the Airpump or *expanſor*, which are almoſt Exanimated thereby; and alſo by the Tenſion and Elaſticity of the Air which is able to draw up Mercury in the *Stagnum*, and very conſyderable Weights: And Breathing is not only Spiration, but Reciprocaly Inſpiration or Drinking in of Air; And there is much

more Inſpired then Reſpired, which is the Atmoſpherical Drink, and perhaps ſome kind of Aliment of the Spirits, but very much Vapor is Excreted by Perſpiration. And there is very great Difference of the Atmoſphere in ſeveral Habitations, Higher, or Lower; as may appear by the *Pycnometer*. But I conceive generaly that ſuch a Temper of the Atmoſphere, as was in the firſt *Expanſum*, is moſt deſirable and healthfull; which, whatſoever it might be otherwiſe, was rather Mingled with Vapor or Waters above then with Fume; And it is requiſite in an Healthfull Air alſo that Excrementitious Vapors as well as Fumes, which continualy Aſcend into the Air, be Purged and Diſperſed continualy by Wind, or ſome Agitation of Open Air, and therefore Cloſe Rooms are very Offenſive, and almoſt Stifle the Breath, eſpecialy if they be Vaporous as newly Plaſterd, or With a Charcoal Fire in them, which ſtrangely Alters the Air by a ſudden and vehement Rarefaction; And becauſe the Water doth moſt evaporate, therefore there is a chief Conſyderation to be had therof, whether it be Pure, or Mooriſh or Brackiſh; for Salt alſo will be Volatiliſed, as I have ſaid; and becauſe the Earth doth alſo Evaporate, and not only the Vapors therin, but Rarefied Corpuſcles of Earth do alſo Aſcend with the Vapors, Conſyderation is to be had therof; as whether it be Sandy or Chalky, which Emitt leaſt or beſt Corpuſcles, or Fenny or Slimy, which are worſt. So that in the Situation of Houſes there is alſo regard to be had of the Soil, and of the Atmoſphere, which is an Aliment, or at leaſt a great and continual Inſtrument of Life, and muſt be Conſydered as ſome part of Houskeeping. The Wind which Purifys the Atmoſphere is rightly termed *Aer Motus*, (as the ſame *Hebrew* word ſignifys both) and I eaſily grant it to be no ſpecial Quality in itſelf, but only Motion and Agitation of the Air which is a very Fluid and Mobile Body, and is Moved Variouſly by the Vapors Variouſly Aſcending into it, and other Meteors in it, and ſuch Circumſtantial Cauſalitys, more or leſs Condenſating or Rarefying it, and which render the Weathercock as Unſtable as the Weather-glaſs. And where the Motion begins, it drives forward the Parts of the Mobile Body of the Air one upon another; and where they find any Vent or Paſſage, they being in Motion flow thither, like Water; whereby in ſome places there are more Conſtant *Eteſiæ*, and Tradewinds, as they call

call them, like *Vento's* or Ventiducts made by Art; and this was one of *Columbus* his Arguments that there was more Earth. And as the Winds are thus caused by Vapors, so the Southern parts of the World being more Watery, are therefore, as I have said, more Tepid or Warm, and Rainy or Misty; and the Northern parts being more Terreous, and Emitting more of the Terreitys, therefore the Northwind is contrarily more Cold and Dry. And the Sun in the Diurnal Motion of the Æther being carried from East to West, and so better Concocting the Vapors which he hath before raised and passed over in such his Diurnal Course, therefore generaly Eastern Winds are also more Cold and Dry, and Western Warmer and Moister; and some Winds are observed to Rise and Fall with the Rising and Setting of the Sun. But if any Wind or Weather be so Copious and Durable as to be carried about the whole Terraqueous Globe, then the same Wind may be of a Contrary Temper from the same Caus; and so many times Rains come from the North and East; and commonly they are very great, becaus they are so Copious and Durable; and so in *Africa*, and other hot Climes, there are Infrequent Rains, but when they happen they are Excessive, becaus the Sun doth very Copiously rais Vapors, and if it happen by any Circumstantial Causality that he can not Concremate and Desiccate them as much, they all turn into Rain. And so the Hot Meteor of a Thunder-cloud draws very Copious and Dark Vapors, which, when the Heat breaks forth in Lightning, are presently Resolved into Rain: though otherwise, when there are few other such Vapors in the Air neer to it, there are also dry Lightnings without any great Noise; becaus they are not Exploded out of such Clouds as the others: and Thunder-clouds may go against the Wind, as we say; becaus they are Moved and Impelled by their own Heat, and by their great Commotion after the Explosion of the Lightning they commonly turn the Wind. And Concurrent Causes may Move and Impell the Mobile Air every way, and when it cannot Move fast enough Progressively, then, as I have said, it must Move Circularly; whereby it becomes a *Turbo* or Whirlwind, which I conceive rather to be such, then all the Winds blowing against one another. *Ignes fatui* are Inflamed Exhalations, more Lucid, and less Fiery, having some Fatt and Viscous Corpuscles of Earth in their Misture; and arise generaly from such Soils.

And if they be more Igneous, and more Rarefied thereby, they are better Concocted, and Ascend higher, and become *Stellæ Cadentes*, and the like, which fall down again when that Heat is Extinct. But these Fiery Meteors which last longer, are not comparably Igneous like *Fulgur* or Lightning, which having a most Rare and Subtile *Fomes*, and being also pent in and Condensated in the Cloud, when it breaks forth, doth not only make a Terrible Noise by the sudden Collision of the Cloud every way against the Air, but also by that sudden Eruption, as well as by the Spiritual Power therof, doth wonderful Execution, and is strangely Influential; and I suppose of all Culinary Fire is most like to Æthereal; but I cannot conceiv that it can so Calcine any part of the Cloud as to forge a *Fulmen*, Thunderbolt, or Stone; though I acknowledg that there is much Earth also in it; wherof as well as of the Water, some Insects, as Tadpols, and others are found to be Produced after Rain. All which Violent and Excessive Meteors are, as I have said, general Effects of the Divine Curse; and so Thunder is called the Voice of God; and ought to be regarded: but I do not apprehend these general Effects to be any such special Prodigys and Portents, as some would have them to be. The *Iris*, and the like, are Properly no Meteors, but only Reflections of the Sun-beams from a Vaporous Cloud like a Prism, being also more Opacous then the Bright Clouds. And I doubt not but that there were Rainbows before the Deluge, (though not before the Fall) as well as Lambs before the Pass-over, Water and Bread and Wine before Baptism and the Lords Supper: for all such Sacramental Elements are in themselvs Natural, and only supernaturaly Instituted to be Symbolical Signes; and so was the Rainbow, which signifys Sunshine after Rain, and doth very fitly declare the Covenant that God made with *Noah*; that as he and his Family were then saved from the Deluge, so it should never after come upon his Posterity: and as God said, *I will look upon it, that I may remember the everlasting Covenant between God and every Living Creature of all flesh that is upon the Earth*, so should we, when we behold this his Bow in the Clouds, thankfully remember his wonderful Deliverance; both that which is past, wherin we all who were then in the loins of *Noah*'s Sons were preserved, and also future; concerning which God hath given us such an everlasting Covenant, and this Signe therof.

SECTION

SECTION IX.

And God said, Let the Waters under the Heaven be gathered into one place, and let the Dry Land appear. And it was so, And God called the Dry Land Earth, and the gathering together of the Waters called he Seas. And God saw that it was Good. And God said, Let the Earth bring forth Grass, the Herb yielding Seed, and the Fruit Tree yielding Seed after his kind, whose Seed is in itself, upon the Earth. And it was so, And the Earth brought forth Grass, and Herb yielding Seed after his Kind, and the Tree yielding Fruit, whose Seed was in itself after his Kind. And God saw that it was Good. And the Evening and the Morning were the Third Day.

EXPLICATION.

God having before caused part of the Water to ascend in Vapors into the Air, did afterward cause the rest to subside, and be derived into certein Canales in the Earth, which he had also prepared for it: and so made the Surface of the Earth, which before was covered with

Water, to appear together with it in one Terraqueous Globe; wherof the Dry Land was Earth, and the *Confluvia* of Waters Seas. And this Ordination of all these three Elements was their Goodness and Perfection. And when God had thus prepared all the fower Elements, he caused the Earth, being pregnant with Vegetative Principles, accordingly to bring forth Grass, Herbs, and Trees, above the Surface therof, after their several Kinds: and the Herbs and Trees had also their several Seeds and Seminal Virtues in themselves, whereby to Propagate and Multiply afterward. And this was their Goodness and Perfection. And all these were the Works of the Third Day.

ILLUSTRATION.

1. *Of Water.* 2. *Of Moisture.* 3. *Of Odors and Sapors.* 4. *Of the Flux and Reflux of Waters.* 5. *Of Earth.* 6. *Of Drines.* 7. *Of Consistence.* 8. *Of Magnetical Virtue and Electricity.* 9. *Of the Immobility of the Earth.* 10. *Of Vegetatives.* 11. *Of the Goodnes of the Works of the Second and Third Days.*

I. THe Water which is Elementary and more properly such, and wherof Vapor and Ice are only Various, is next to Air above it, both in Situation, and Nature, as may appear by Vapor, and to Earth beneath it, as may appear by Ice. And though Earth and Water were in this Third Day made, and still are, one Terraqueous Globe; yet as they were Created in the Begining, so they still are several and different Elements; aswell as Air and Æther are several and different Heavens. And though they are thus Composed into one Globe, yet they have their several Provinces therin, as well as the others, though not in the same maner or Figure. And so it is said not only that Dry Land did appear, which was before covered with the Sphere of Water, as that was with

with Air, and Air with Æther, but also that there was a gathering together of the Waters into one place, generaly, wherunto all Rivers do run, though branched out into several Canales: and though standing Ponds, Lakes, and perhaps some Gulphs or Seas, as the *Caspian* Sea, may not communicate with the Ocean, yet they are also *Confluvia*, and Seas, and so termed distributively afterward, and all of them distinguished from the Waters which first covered the Earth all over; wheras now the main Ocean covereth and compasseth it about only in one place. And as these Waters beneath flow from the Earth, so they are still above it; as the Waters above floating in the Air, are also said to be above or upon it (for so the word signifies upon or above, and so Fowl are said to fly above, or upon the Heavens) and as they are thus distinguished from Waters beneath, so are also those Waters above the Earth from Waters beneath the Earth, that is, Subterraneous Fountains, or depths of the Seas: for neither are any Waters under the whole Earth, which is most Dens, and consequently lowest; nor above any of the whole Heavens, Superæther, Æther, or Air itself, which are more Rare, and consequently Higher, as I have shewed: but these Expressions concerning the Vapors and Fountains are Respective, according to the Subject Matter, and not to be understood Absolutely; and they do indicate several Regions of the Waters, wheras we have no such indication of any several Regions in the Air or Æther, as I have observed. Also though the Evaporation of Waters by Heat be Natural, and only Supernaturaly produced by God in the Second Day, as his other Works of Improper Creation were in other Days; yet this Distribution of Earth and Waters in the Terraqueous Globe therof, which was so Composed in this Third Day, seems more Extraordinary, and Artificial, and such as doth most plainly declare the Immediate Operation of God in this, and all the other Days: for by what Natural Power could the Earth and Isles be raised above the Waters? or the Mountains and Vallys be so ordered and Indented? or who could cast those great Banks of the Shores, and cut those vast Chanells of the Seas and Rivers, or say unto them, thither shall ye go and no farther? which therefore God is said Originaly to do by Line and Levell; as in Waterworks, we so set them out that they may run to their Levell this way or that way in the Cutts prepared for them. And though men may make such less alterations

rations therin, and ſome greater have been made by accidental Breaches and Inundations, yet as God ſaith, *I brake up for it my Decreed place* (or as it is Originaly, eſtabliſhed my Decree upon it) *and ſett Barrs and Doors*, ſo generaly and in the main it continues the ſame: and ſince that Great and Univerſal Deluge, yet Coſmographers can ſtill find out thoſe Seas, Rivers, and Iſles, which *Moſes* declareth to have been before it. And thus the Divine Pſalmiſt deſcribeth both the Proper and Improper Creation of Waters and Earth, *Thou coveredſt it with the Deep, as with a Garment; the Waters ſtood above the Mountains. At thy rebuke they fled, at the Voice of thy Thunder they haſted away. They go up by the Mountains, they go down by the Vallys, unto the place that thou haſt founded for them. Thou haſt ſett a Bound that they might not paſs, that they turn not again to cover the Earth*, and ſo proceeds to ſhew the great Uſefulneſs therof, which thereby God prepared both for Vegetatives and Senſitives in the whole *Oecumene* or Habitable Earth. But though the Earth generaly is thus raiſed above the Waters, not only in the Mountains and Summits therof, but in its whole *Campus*, which lys above the Levell of the Waters; yet the Water, in its own Province, is above the Earth, on which it flows; and ſo the Earth is very elegantly expreſſed *ſtanding out of the Water, and in the Water.* And wheras it is ſaid that God *founded it upon* (or above) *the Seas, and eſtabliſhed it upon* (or above) *the Flouds*; it is very true and proper according to the Subject Matter, wherof the Pſalmiſt there ſpeaks; that is, of the *Oecumene* or Habitable Earth, as it was ſo raiſed above the Waters, which before were above it; and thereby was made fruitfull and Habitable: which the precedent Context doth plainly declare, *The Earth is the Lords and the fulnes therof, the World and all that dwell therin:* nor do I apprehend that the whole World of Spheres, Aereal, Æthereal, and Superæthereal, is there intended; though the Author of *Eſdras* ſaith alſo, that the Heavens are founded upon the Waters: but I rather conceiv that by World is there meant *Orbis Terræ*, as it is uſually ſo taken Hebraicaly, and in all other Languages, becauſe the Earth is our preſent World; and ſo more reſtrictively we ſay the Chriſtian World, and the like. But how farr the Waters are beneath the Levell or *Campus* of the Earth is not particularly expreſſed; yet we read of a great Deep or Ocean, and of Fountains therof or therin;

therin; (as we ſo ſay *Fons Blunduſii*, and the like) not that there is, beſides the Ocean, any Fountain therof beneath it, which feeds and ſupplys it; for it is called the Deep, becauſ it is the deepeſt of all Waters: and ſo Fountains and Depths of Waters are uſed indifferently, as it is ſaid, *A Land of Brooks of Water, of Fountains, and Depths, that ſpring out of Vallys and Hills*: and both are ſaid to be under the Earth; wherefore becauſ Rain and Waters in thoſe dry Countrys were accounted great Bleſſings, *Jacob* bleſſeth *Joſeph* with *Bleſſings of Heaven above, and Bleſſings of the deep that lieth under*, which *Moſes* alſo repeateth: nor is it ſaid that there is a Deep, and alſo Fountains therof, beneath, and beſides it, but they are alway termed the Fountains of the Deep, not only in reſpect of itſelf, but alſo of all Vapors, Rain and Rivers, wherof the Deep or Sea is the Fountain; to which that expreſſion ſeems to refer, for ſo they are joined together, as it is ſaid, that there were *the Fountains of the Great Deep broken up, and the Windows of Heaven were opened*: and indeed they are ſo made to be Fountains one unto another mutualy and reciprocaly, as I ſhall ſhew heerafter: and in the Deluge, the Conflux of all the Waters was gathered together, to cover the whole Earth, not as it did at firſt equaly cover the whole Surface therof, but the Canales, *Campus*, and higheſt Hills, as they then ſtood and continued: *fifteen Cubits did the Waters prevail, and the Mountains were covered.* Whereby we may partly eſtimate the quantity of the whole Body of Waters, which yet may be Rarefied or Condenſated more or leſs: nor can we exactly tell what is the Proportion of the Surface of the Waters to the Surface of Dry Land in the whole Terraqueous Globe. The Author of *Eſdras* ſaith, *Upon the third Day thou didſt command that the Waters ſhould be gathered in the Seaventh part of the Earth; Six parts haſt thou dried up*; which might probably alſo have encouraged *Columbus* in his happy confidence of more Earth then was diſcovered before him, and according to this account there ſhould ſtill be much *Terra Incognita*. The Denſity of the Body of Air more then of Water hath been obſerved to be as about a Thouſand to One, and yet Waters beneath are Rarefied into Vapors or Waters above, which are as Rare as Air itſelf; for Vapors and Fumes do not aſcend into the Air by Impulſion of one part after another, as Water may be ſquirted upward out of a Syringe, or as they are called *Pillars of Smoak* in

respect of the Figure therof; but if a *Titio* or Brand be held downward in the open Air, yet the Smoak therof will ascend upward, or remain suspended: and perhaps some Vaporous Meteors are Indefinitely in the Air or any Region therof, even the highest Surface, and so said to be upon it, as I have shewed. And I shall heer observ, that as Vapors, or Waters above, were so made by special Creation in the Second Day, so they are of special Use and Consideration, being a very Subtile and Spirituous *Effluvium*, and a notable Instrument of Nature, and also a *Menstruum* carrying forth with it not only part of the Body, but also much of the Spirit: and this is indeed that which Chymists commonly call, Spirit, as it so carrieth forth the Spiritual Qualitys with itself; being a very fitt Vehicle therof: whence some have fansied a Conversion and Transpeciation in itself, which I have already refuted: but certeinly it causeth a very great Alteration of the Bodys out of which it is emitted, and Translation of the Spirits therof; being not so Dens or Consistent as Earth, nor as Water out of which it is produced; and almost as Rare as Air and Æther: and so Intercedeth and Mediateth between all the Elements, and doth Evoke the Spirits therof; as is commonly observed of the firmest Timber, that if it be often Wett and Dry again, it soon Rotts; which also takes away the State of Hay, as Husbandmen say, in their Chymical expression therof. Yea, I suppose, that what is intended by the famous Chymical Term of Fermentation is only the Operation of a Hott Spirit on a Moist, Intrinsecaly within the Body therof, by Vaporation; which plainly discovers itself accordingly by some Turgescence and Ebullition; and whereby the Benigne and Homogeneous Spirits are better Concocted and more equaly Distributed, which doth exceedingly Meliorate and Maturate; and the more Maligne and Heterogeneous do Evaporate, or otherwise the Spirits being in agitation, by any Intemperate Excess, or Defect, become more Corrupt and Putrid. Thus Heat and Moisture Operating and Fermenting within Bodys produce all Elementary Generation and Corruption, and are thereby also very subservient to Vegetation, and Vivification. Now as I said before of Air, so the very Spirit of Water is unknown to us, nor have we any apt *Vocabulum* therof; or if we had, yet we could not thereby know the Substantial Spirit itself, or the Nature therof; but only by those Accidents

dents or Spiritual Qualitys, wherof I shall now proceed to discourse.

II. The first or principal Quality of Water is Moisture, as I have already proved: and indeed, unless Water be Moist, I neither know what is Water, nor what is Moisture. And I suppose that Elementary Water is most Moist, that is, it doth Moisten most strongly, though Vapor, being more Rare and Subtile, may sooner penetrate; as Fixed Fire doth certeinly Heat most, though Volatile Flame doth most penetrate: and yet when Vapor hath thus penetrated, it doth most Moisten by being Condensated again into Water: but Vapor may be also Adusted and turned into Smoak, which is Actualy Dry, as I have shewed, and that cannot be supposed of Water Immediately, untill it be first turned into Vapor. And Oil seemeth to Moisten more then Elementary Water, becaus it is more Unctuous, and Evaporateth less, whereby it reteins the Moisture longer; as a boiling pot of Water being covered, doth retein the Vapor and Moisture more then uncovered, and therefore that Water is longer in boiling away, and so is Oil then Water; thus though pure Water doth, as I said, Moisten most, becaus Moisture is the Proper Quality therof, and all others Moisten only by participation of Water; yet it doth also Evaporate most, whereby it becomes Vapor and Water above, which is also another Proper Quality therof, and thereby drys away soonest. Also though it moisten most, yet in Washing it may be advantaged by other Bodys; as pure Water doth not Rens or Scowr so well, as if it be mingled with Earthy particles of Chalk, Marl, Bran, or the like, which render it more Abstersive, and make it, as Huswives say, bear Soap better; becaus those Terreous Corpuscles do Imbibe Unctuous Bodys better then Water, and thereby reconcile them together, yet not without heating, beating, laving, or the like: and so Water and Milk mingle together, the Oleous parts of the *Butyrum* being reconciled to the Water by the *Serum*; wheras Butter itself, Oil, Turpentine, Mercury, and the like, will not so easily mingle with Water; becaus they are not so Aqueous; which appears by their less Evaporation: nor will Water easily mingle with Vapor, while they continue such; becaus God hath so vastly differenced them in their Creation, that they shall be either Waters beneath, or Wa-

ters above; whose different Density is as a Thousand to One, and they can hardly continue in any of those thousand Degrees between them, though they pass from one to the other by them all; as may appear by the Motion of Water boiling in a pott, which first is scarcely seen to Move, and then Simpers, as they say, and so boils up more and more, though they will continue in some Degrees beyond that proportion, as Meteors in any Region of the Air. And Evaporation is such a notable Property of Water, and Symptom of the Aqueous Nature, that I suppose all Elementary Water, if it be not frozen with Cold, will Evaporate always with any Degree of Heat, or *Tepor*; as certeinly it will in a Cold Still; though proportionably less with less, and more with more Heat: and so even those winds, which we call Cold from that Predominant Quality, do Dry notably, by carrying away the Vapors, which even then do arise, whereby others may more freely succeed, (as I said concerning the boiling pott, and so it may be observed in Saltworks, or the like.) But though such more Heterogeneous and less Aqueous Bodys, as Butter, Oil, Turpentine, and the like, will not eatily mingle with Water, or other such Bodys; nor become Continuous with them: yet if they be Fluid, they may be notably Contiguous, becaus they can conjoin themselves to every part and pore therof; and do notably Cohere to and with Consistent Bodys by their own Unctuous Glutinosity: yea, even Water itself, though neither Unctuous, nor Glutinous, so will Cohere; and so would Mercury also, if the Weight therof did not oversway it. And, I suppose, the Experiment of the Capillar Tube to be from this Cohesion and the Homogeneity of Water, and another Conjunct Reason (which I shall assigne afterward) for I know no such Spiritual Homogeneity between Water and Glass, which is rather Terreous (though Poets call Water Vitreous) but as I have shewed the whole Body of Matter is Homogeneous in itself, and Continuous with itself, though Spirits may be Heterogeneous, and by their Heterogeneity Discontinue their Bodys of Matter; therefore, as when by reason of their Consistence, or otherwise, they cannot perfectly close together, other Bodys do and must Intervene, to prevent Vacuity; so when themselvs can so close, they also in like maner prevent it themselvs, and so need nor, but rather exclude the Intervention of any other Bodys by their own Præpossession; whether such Contiguous Bodys be Homogeneous,

mogeneous, or Heterogeneous; becauſ they are all Bodys of Matter, whatſoever their Spirits may be: and ſo poliſhed Metalls will Cohere to Marble, aſwell as Metall to Metall, or Marble to Marble: and thus Water being Naturaly as Smooth, and of as equal a Surface, as any Glaſs can be made Artificialy, and being Contiguous to the Capillar Glaſs, doth notably Cohere, as it will to any Smooth Glaſs, ſo that it can very hardly be ſhaken off by ſwinging, or the like; though it will more eaſily ſlide by its own Weight or *Pondus*, as poliſhed Marbles will one from another being moved by any *Potentia*, whereby Air may ſucceed at the Edges therof; though otherwiſe they will not be pulled one from another Parpendicularly with leſs Power then if they were ſo farr Imperfectly Continuous: and ſo according to the proportionable Weight of the Water in the Capillar Tube, it doth deſcend and depart from its Contiguity. And thus the Inſide of the Tube of Glaſs, (which is therefore Capillar, becauſ the Cavity therof is not much bigger then an Hair) being Madefied, either by other Water, or by the Vapor of that Water wherin it ſtands (which as I have ſaid doth always Evaporate, if it be not obſtructed) Madefying the Glaſs by Degrees, though very ſlowly, and in much longer time, and the Glaſs being either way Madefied with Water in the Inſide therof, which, as I ſaid, ſticks ſo cloſely to the Conſiſtent Body therof, and reaching down to the Water wherin it ſtands, and which is Homogeneous with it, both the Waters do mingle, and would flow together, as all Aqueous Bodys Naturaly do; and becauſ the Water in which it ſtands being Stagnant, and having no Actual Weight, cannot draw the other down to itſelf being ſo ſtrongly Coherent to the Inſide of the Glaſs, as I have ſhewed that upper Water according to the ſtrength of the Coheſion draws up the lower Water to itſelf, ſo long, and ſo high, untill the Weight of the Water ſo drawn up doth overſway it; and accordingly it lifts up and keeps ſuſpended a proportionable *Cylinder* of Water, higher, or lower, as the Cavity of the Tube is leſs, or greater; and becauſ that *Cylinder* of Water is ſupported, as I ſaid, by the Coheſion to the Sides of the Tube, which is therefore ſtrongeſt at the Sides, the Water ſo ſupported is there higheſt, and ſo leſs, and leſs, and loweſt in the midſt; whereby the Surface of the *Cylinder* becomes Concave: wheras Mercury will not ſo aſcend by reaſon of its over-weight, which, as I have ſaid,

doth prevail against any such Cohesion with Glass; and therefore also if the Capillar Tube be sett in it, the Surface within the Orifice therof will not be Concave, but Convex; becaus by the Orifice of the Tube, the Mercury, which is a farr more Consistent Body then Water, is depresst most at the Sides, and so thereby less, and less, and therefore is higheſt in the midst. Also Water hath some Consistence in it from the Terreity, that is in the Mistion therof; and this is the other Concurrent Reason which I before intimated; for if it were wholy Consistent, as Earth; or Fluid, as Æther, the Experiment would not Succeed; but by the partial Consistence therof, it doth also somwhat Rope, as we say, or hang together, and so by the Homogeneity of the Water in the Tube, and that wherin it stands, meeting and mingling together, and being apt to flow together one way or other, the Water in the Tube, having the advantage of Cohesion, and Prevalence therof above the Weight of the Water in which it stands, doth so farr draw it up, untill they both become Equipollent, and then there they stand. And thus if you fill a Glass Cruet almost to the top with Water, and then incline it toward the Nose therof, so as the Water may run farther into it then when it stood erected Perpendicularly, and then very gently reverse it, and erect it again Perpendicularly as before; the Water will stand in the Nose proportionably above the Levell therof in the Neck of the Cruet, as it will in the Capillar Tube; and both are from the same Concurrent Reasons, which I have declared. Nor do we discover the Symptoms of any other Motions of the Water afterward, or any farther advantage gained by such Elevation therof, neither will it so run in a *Siphon* higher, or more swiftly, then it would do otherwise. And though the Subsilience of the Water in the Capillar Tube be very quick, and *per Saltum*, (as generaly such Motions are) yet it is not very strong, as you may perceiv, if you stop the upper Orifice of the Tube with your Finger, which will hinder the Ascent therof, becaus it hath not sufficient strength to Compress the Included Air. But this Experiment plainly discovers the Continuity of Matter, and Spiritual Appetite of Union, that is between Homogeneous Natures, especialy Elementary, being next to Matter, which can never be Disunited from itself, as Material Spirits and their Bodys may be; which yet being Actualy United, will flow together, if they may, and cannot be so easily

easily Divelled, as Heterogeneous. And it shews that there is some Earthy Consistence, even in Water; which appears also in Bubbles, that are as Skins of Water including Air; and as the Heterogeneous Air doth Conglobate within, which makes the Bubble Spherical, so it doth thereby resist the Air without. Also not only thicker Liquors, but even standing Water hath some such Skin upon it; so that a Needle very gently laid upon it will not sink so fast at first, as when it hath broken through that Skin: And so we see such Cobwebs on the ground, as Husbandmen call them; but this Terreity most notably appears in Vapor Adust, or Fume, which turns into a Soot in Chimnys not only as Motes, but in larger Pulvisles; and so in Conglaciation of Ice, which discover plainly a Misture of Drines and Consistence, that are Earthy Qualitys, with the Moisture of Water: Also we may observ how in Filtration Water ascends, as in the Capillar Tube, but by many Steps and Degrees; and then descends by the Overweight, as in the *Siphon*; and as it would in the Capillar Tube so made, and posited, and then madefied; but not otherwise.

III. Though I suppose there may be several other Simple Qualitys both of Air, and Water, besides the First, as they are called, that is, Cold of Air, and Moisture of Water, as well as Light and others, besides Heat, in Æther; and Consistence and others, besides Drines, in Earth; yet becaus they are not so obvious, I shall not now hunt after them farther then I meet with them in such Sensibles, wherin I conceiv Water and some Simple Quality therof to be Predominant, as I have before observed of Color, and Sound. Now these Aqueous Sensibles are Odors, and Sapors; and as God divided the Waters into Water beneath, and above, or Gross Water, and Subtile Vapor; so these two several Sensibles are severaly Inherent in them, that is, Odor in the Vapor and *Effluvium*, and Sapor in the Grosser Water. And yet Odor is more Gross then Sound, as Sound is then Color, and neither Transient as Sound, nor Emanant as Color, but more Fixed and Inherent in the Odorous *Effluvium*; and is accordingly varied and carried away with it: and as the Vapor is more Dens, or Rare, so generaly is the Odor more Gross, or Fine: and as the Vapor, so the Oder, is more Dens and Gross, as it is more neer

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to the Aqueous Body; and more Rare and Fine as it is farther Effluent from it, and more Disperſed thereby: and yet there is a very longinquous Efflux and Waft of Odors in ſuch diffuſion of Vapors; as is ſenſibly perceived by the Sent of Heaths of Roſemary very far at Sea, and by the Convolation of Ravens and Vulturs to Carcaſſes very farr diſtant. Alſo as Odors are of an Aqueous nature, ſo there is a very quick and permanent Adheſion therof to Moiſt Bodys; for ſo the Sent of an Hares or Deers Foot continues long on the Moiſt ground in every *Veſtigium* therof, though they run very ſwiftly over it; which could not be ſo deteined without the Subtile Vapor, in which it is Inherent, and which ſticketh to the ground; and is not ſo eaſily diſcharged as a Cloud of Breath from a Diſh of Pewter, or Silver, or ſuch other Bodys which are leſs Moiſt: yet as the Subtile *Effluvium* of Odorous Vapors is emitted from the Body which is the Fountain therof, ſo that Body itſelf alſo is Odorous, having its own Inherent Odor, and may be ſented by the Odorous Vapors as they paſs out of it into the Noſtrills; and though Drines may Predominate in it, yet if it be not ſo Dry, or ſuch a *Caput Mortuum* as doth amitt no Vapors, which very few Bodys do; it may have a Sent, and that very ſtrong and vehement; as Spices, and the like; becauſ ſuch Vapors are alſo more ſtrong, and there is a Terreous Quality, as well as Aqueous, wherof Odor is Compounded, as I ſhall afterward ſhew: but commonly the Odorous Evaporation is more Actuated and produced by Moiſture; as Flowers and Herbs after Rain ſmell more ſweetly: and Dry or Unctuous Perfumes, by Infrication of the Powder, or Imbibition of the Oil or Butter, are more ſtrong and durable; becauſ thereby there is an Incorporation of the very Odorous Bodys, which are the Fountains of the Odors, as I ſaid: and generaly all Diſſolutions, either by Maceration Externaly, or Putrefaction Internaly, whereby the Vapors are more freely Emitted, and the Odors Actuated, do cauſ greater Sents: alſo long reſtraint of the Actual Vapors and Odors, as in cloſe Veſſels, or Rooms, when they are firſt opened cauſe ſtronger Smells, becauſ they are ſo Copious. Now as Odor is a Proper Senſible in itſelf, ſo it is alſo Previous to Sapor, and Smelling, as it were, a Pregustator of the Senſ of Taſt; becauſ Odor and Sapor, as I ſaid, are Connatural Qualitys chiefly Subſiſting in the ſame Element of Water; though they are very different

rent in themſelvs, as Heat and Light are in Æther, and perhaps more, becauſ they are not Simple, but Compounded with other Terreous Qualitys, and require ſuch ſeveral Bodys of their own Element, as Waters above, and beneath; and certeinly they muſt ſo differ, becauſ they are ſeveral Senſibles of ſeveral Senſes, which alſo very ſenſibly proves Heat and Light to be Realy Different, becauſ Heat is an Object of Tact, and Light of Sight. Thus there may be more Odor, or more pleaſing or diſpleaſing, then Sapor; and ſo convertibly, in the ſame Body; but ſuch as are of fetid Sapors have alſo commonly fetid Odors, and pleaſing Sapors no diſpleaſing Odors. And I ſuppoſe that vehement and ſtrong Odors or Vapors in any Body do indicate and declare it to be ſome notable *Pharmacum*, eſpecialy if they be ſuch as are not very grateful to the Senſes, which declare it to be not of any Dietical, or ordinary, but extraordinary Uſe and Virtue. Now as it is evident, that Actual Odors are Immediately Inherent in Vaporous *Effluvia*, which the very Organ of Smelling, that is, the Mammillary Proceſſes, do ſufficiently atteſt, being ſituated above the *Nares*, through which, as Tonells, thoſe Vapors do paſs; ſo it is as apparent that Sapors do Inhere in the Watery Juice of the Sapid Body, becauſ if that be expreſſed, it becomes Inſipid and the expreſſed Juyce more Sapid, as Wine, Cider, Perry, Gravy or Juice of Fleſhmeat, and the like. And it alſo appears to me that Odors or Sapors are no Simple Qualitys of Water only, (as Sound and Color are not of Air, or Æther only) but that they are all Miſt with ſome Terreous Simple Qualitys, which are unknown to us, what they are, and yet we may alſo know, that they are not Odorous or Saporous in themſelvs; becauſ Elementary Water, or Earth, do not either Smell, or Taſt much; as Lucidity and Opacity are not much ſeen of themſelvs, and indeed not without the advantage of Conſpiſſation or ſome ſmall Miſtion, or the like: but, as I confeſs, I firſt derived this Notion from the antient Philoſophers, who have diſcovered *Lucidum* and *Opacum* to be the Principles of Color, which I have thus farr improved and produced to the other three Senſibles, Sound, Odor, and Sapor, that is, all the proper Senſibles, except the fower firſt Qualitys (which are alſo in themſelvs Simple, and Miſt to be made Senſible, being too ſtrong and vehement in their own Elementary Bodys) and they are indeed Social, and perhaps Auxiliary Qualitys, with all

and every the Simple Qualitys of the other Senſibles; as their Proper Senſ, which is Tact, is the Fundamental Senſ of all the other Senſes, as I ſhall ſhew heerafter: ſo I fear to ſeem too Curious and Novell heerin to others, and alſo doubt, leſt by putting too much of this new Wine into old bottles I ſhould offend others; having not any Current *Vocabula* whereby to expreſs the very Names of theſe Principles, nor Authority enough to Coin them; yet I ſhall generaly expreſs my Sentiments of the more Active and Aqueous Principle both of Odor, and Sapor; which I call *Acidum* or Sharp, as alſo of the Terreous Principle therof, which I ſhall call *Fatuum* or Vapid; and ſo leav it to others more particularly to diſtribute them. And ſo I conceiv, that accordingly in Chymical Separation the Vaporous Spirits or Effluxes are more Acid, and the *Caput Mortuum* more Fatuous and Stupid; and in Natural Generation and the Proceſs therof, the *Succus* of Fruits, and the like, is firſt Acid, or more Acerb; and afterward more Sweet, then Strong or Rancid; and at laſt Vapid: wherin the more Active Quality firſt prevailing in the Fermentation, doth Actuate ſome ſuch Acid Humor, which makes the Fruit, or the like, more Acid and Poinant, and then by expenſ of the eagernes therof, by Evaporation, and a more equal Diſtribution in the Concoction of both Qualitys, it becomes more grateful to the Senſ, or Sweet; and as that Temperature begins again to be diſſolved, more Rancid; and at laſt when the Active Quality is wholy emitted in the *Effluvia*, or Conſopited and overcome by the Terreous, Vapid. Thus alſo the Mouth, which taſteth Meat, hath judged therof,

Infanti Melimela dato fatuaſq; *Mariſcas,*
At mihi qua novit pungere *Chia Sapit.*

And therefore generaly elder men delight more in ſuch Acid and Poinant Sapors; becauſ their Senſ of Taſting is more Weak, and as I may ſo ſay, Inſipid in itſelf; and children in Sweetmeats, which are of a more equal Temper, and conſequently more ſuitable to their more exact Senſation. There is an old Problem, whether Odors do Nouriſh? which I ſuppoſe may eaſily be reſolved, that they do not, nor cannot Nouriſh, as Odors; for ſo Sapors, as Sapors, do not Nouriſh; becauſ they are only Spiritual

ritual Qualitys, and no *Materia Nutritiva*; nor can they Migrate out of their Bodys; nor do they so much Nouriſh in and with their Bodys, as Condite Meats and Drinks, wherin they Inhere; and there are many other Qualitys; which are neither so Odorous nor Saporous, and yet more Nutritive and Assimilative. But as Sapor doth most properly commend Meats and Drinks to the Appetite (which greatly conduceth to Nouriſhment, and so there is sometimes a better Concoction and Nutrition of and by that which is more gratefull to the Taſt, though leſs wholeſome in itſelf, then of that which is more wholeſome, and leſs grateful according to the the Conſent and Confederacy of Nature, eſpecialy if the Delectation and Averſation be extraordinary, as in Longing or Loathing) so next to Sapor, Odor alſo, which is very Homogeneous with it, as I have ſaid, doth by a pleaſing Fragrancy excite the Appetite; and so, though more remotely, may Muſike at a Feaſt, as *Siracides* obſerveth; and the Color of Wine when it looketh Red, and ſparkleth in the Glaſs, as *Solomon* obſerveth: but theſe are only Sympathetical Exhilarations and Provocations of the Senſitive Imagination and Appetite, (which yet conduce to Vegetative Nutrition, and plainly ſhew the Subordination therof and Combination between them) and so Phyſicians generaly preſcribe Mirth at Meals; as he alſo adviſeth, *Eat thy Bread with Joy, and drink thy Wine with a Merry heart.* But the greater Queſtion is, whether Vapors as Vapors, and particularly, Odorous, may Nouriſh? and then they are to be conſydered, either as they may paſs into the Brain, and so certeinly they may Intoxicate, as ſome find by Sents of Winecellars, Fumes of *Tobacco*, and the like; yea, ſweet Perfumes, if ſtrong and vehement, may cauſ Headach; and it hath been credibly reported that ſome have been Poiſoned by Venemous Sents: wherefore it will be very hard to conceiv, that the Animal Spirits may not as well be refreſhed and cheriſhed by benigne Vapors, as by maligne thus diſtempered: or as they paſs by Introſuction or Inſpiration into the Lungs, and so ſeem to be not only for Refrigeration; but ſince there is more Inſpired continualy then Reſpired, it may deſerv farther Inquiſition, whether the reſt doth not paſs out of the Lungs by the Heart into the Arterys, and therebyſerv both for Purification and Attenuation of the Bloud, and alſo for Nutrition? for though I conceiv Elementary Fire or Air alone not

to be Nutritive, yet I know not why Vapors may not Nouriſh as well as Drink, ſince they are only Water Rarefied: and there is not only Air, but alſo much Vapor in the Atmoſphere wherin we breath, and which we continualy ſuck in by ſuch Inſpiration: and if that be too pure an Air, and not ſufficiently Vaporous, as in the *Andes*; or if the Vapors be more Adulted by Fire of Charcoal, or the like; or Corrupted by much breathing in a cloſe Room, or the like; we feel great want of a more Nutritive as well as Refrigerative Air: and plainly the Birth or *Fœtus* while it it in the Mothers Womb, and is Nouriſhed by her, hath no Uſe of the Lungs, nor Inſpiration thereby; but aſſoon as it is brought forth, it needeth this *Breath of Life*, as it is termed, as well as any other Nouriſhment, and cannot live, as before, without it; though there was before the ſame Motion and Heat of the Heart, which did need as much Refrigeration as afterward: and though it may ſeem very ſtrange that Vapor thus paſſing Immediately from the Lungs by the other paſſages through the Heart into the Arterys, and not like other Meat and Drink firſt into the Stomack, ſhould Nouriſh, without any more Proceſs of Concoction, yet it may be alſo conſydered how much ſooner Drink in an empty Stomack is Concocted then Meat; and whether Vapor, which is ſo much more Rare and Fuſile then Drink, need any ſuch Proceſs, and may not by the Heat and Motion of the Bloud be Concocted and Miſt with it; which is all that I intend by this kind of Nutrition; and ſo I refer it to the Judgment of learned Phyſicians; who if they ſhall judg it to be ſo, will alſo judg the Atmoſphere to be of ſuch conſequence as I formerly intimated.

IV. *All the Rivers run into the Sea, yet the Sea is not full. Unto the place from whence the Rivers came, thither they return again*, as the wiſe Philoſopher ſaith, moſt truly and Philoſophicaly, according to the Divine Hiſtory of the Creation of Waters beneath, and Waters above, and the mutual Reciprocation therof; though perhaps not according to Popular Underſtanding: for indeed the Popularity, which ſome weak and ſhallow Wits impute to Scripture, is rather in their own Apprehenſions, then in the Expreſſions, wherin Scripture is alway Conſonant, & the Truth therof Conſiſtent with itſelf; and ſo we are to Interpret them accordingly, and to reduce them all to the Syſtem of the World, which is Intentionaly reveled and declared

unto

unto us in this Divine Hiſtory of the *Geneſis* therof: and then we ſhall neither, as ſome, place Waters below the Earth, becauſ Springs are termed Subterraneous, or above the Æther, yea the Superæther, becauſ the ſame word ſignifieth both Air and Heavens; and ſo make them to poſſeſs both the Center and Circumference of the whole World: nor conceiv that Rivers flow from the Ocean only by Subterraneous paſſages, and ſo flow thither again in their Canales: whenas there is not any mention made of Rivers in all the Six Days Works; but only of Waters above and Waters beneath, which were firſt gathered into Seas: though I doubt not but that Rivers were alſo made afterward in the Third Day; yet firſt by Waters above, or Vapors, and in the ſame Order of Nature wherin they are ſtill continued; that is, by the deſcent of Vapors firſt raiſed from the Seas into the Earth; and therefore only Vapors or Waters above, and Seas or Waters beneath, are heer mentioned: and ſo afterward we read that *There went up a Miſt from the Earth, and watered the whole face of the Ground*, before we read of the fower Rivers that encompaſſed *Eden* about, and were alſo fed and continued by it: and the Vapors thus deſcending into the Spongy Earth, where they meet with Stones, or other ſuch Bodys leſs apt to Imbibe them, do ſtand in Drops, as they do on Marble (which Poets call the Tears of *Niobe*) and thoſe Drops gathering together in Fluxes make at firſt litle Rills, and they afterward Rivulets and Rivers, which run again into the Sea, and ſo the Rivers were made, and are ſtill continued; and this, and no other, is the Courſ of the Waters, as the Pſalmiſt affirmeth, *They go up by the Mountains, they go down by the Vallys, unto the place which thou haſt founded for them*, and ſo we read of Windows of Heaven, aſwell as of Fountains of the Deep, and the Author of *Eſdras* calleth them alſo, *Springs above the Firmament:* for ſo indeed they are Mutualy and Reciprocaly Fountains each to other. And this plainly is proved by the freſhnes of Rivers, which may not be imputed to any ſuch Percolation through the Earth, whereby it hath formerly been ſuppoſed that Salt might be Separated from Water, but is now found to be otherwiſe: I have tried it by ſo ſtrict a Percolation, that only a Drop or two of Brine have been Excerned in a whole Days time, and yet they were ſo Briny, that I could perceiv very litle or no difference; and all Saltmen find Evaporation to be the moſt eaſy

and natural way of making Salt, which therefore certeinly is the way of Nature, in so great an Evaporation, as apparently makes all Rainwater fresh, and consequently all Riverwater. Nor are Salt Springs from the Sea Immediately, or Mediately, but from Salt Mines in the Earth, like other Nitrous, Bitumineous, or Iron Springs; and the like; though I also acknowledg, that Salt may be Volatilised, as Chymists say, and which doth very sensibly appear to us who dwell neer to the Sea, where Woods on that side toward the Sea are blasted thereby, and Iron Nails and Window Barrs rotted (as Iron will swell and be corrupted by lying long in Saltwater) yet these Vapors of the Sea go not farr, nor are such Experiments therof found at any great distance; much less can they make Salt Springs in the Inland, where also fresh Springs flow very neer to them: but they are both first from Vapors, and then the Salt Springs are made Salt by runing through Salt Mines. And lastly, I shall approve it by a plain Experiment which I received from a very Credible Person, whose Houf standing at the bottom of a declive Hill, and wanting Water, he caused a large Trench to be digged down the side therof, and many other less Trenches branching out of it both ways, and then filled them all with Pebble Stones, and again covered them over with the Earth; and found Water to flow at the bottom of the main Trench, through a Pipe laid to receiv it: which is only by Artificial application of the same Natural Causalitys. And when I had reported this to a Noble Lord, he confirmed it with another Observation which himself had made, in certein Quillets or litle Quagmires, which have Water springing and standing in them; by causing them to be searched, and the ground to be digged under them, where he found Beds of Stone: (which might also give occasion to the Poets to feign Rivers powring their Waters out of Stony Urns) Nor indeed is it Imaginable that Rivers and Springs should otherwise come from the Sea, whose highest Watermark is farr below the Springs; as is well known to such who live neer to the higher Shores of the Sea: and so also is attested by such who have gone up the Pike of *Teneriff*, wherin they found a Spring farr above the Sea: wheras Water, while it is such, cannot ascend above its Level; for then it should rise above itself: becauf it is all one Equidens and Fluid Body. And Springs rise first out of the Earth in very small Sources, and not from any

any such Subterraneous Rivers, as some have supposed, flowing in great Canales under the Earth, and Impelled by I know not what Subterraneous Vapors, like Bloud in the Veins. But though all Water will run to its Levell, yet if it be not also some way Impelled, it will run very slowly, and so swell and mingle by degrees as it can hardly be perceived to run: wherefore it is observed in such Cutts and Aqueducts, that if about a foot Fall be not allowed for every Mile, there will be a very litle Current of the Water, wheras Rivers run very swiftly, and some of them with a very Rapid Current; which must be by a farr greater Fall: and therefore the Springs or Sources of all great Rivers must be farr within Land, and also fall from much higher ground; as the Author of *Esdras* saith, *That the Flowds might powr down from the Rocks.* Having thus farr consydered the Cours of Waters from the Sea into the Air by Evaporation, and from thence to the Earth, and from the Mountains or higher ground therof to the Seas again, which is the first and great Reciprocation therof, whereby they are such Mutual Fountains each to other, I shall now farther consyder that which we commonly call the Floud and Ebb, or Tides of Seas and Rivers, which is also another Mutual Reciprocation of Waters; for so the Floud of the Seas is the Ebb of the Rivers, and the Ebb of the Rivers the Floud of the Seas, not Circularly, as the other, but only describing a very small Segment, or part of an Arch, like a *Pendulum.* Now becaus so many several *Hypotheses* therof have been offered by others, and scarcely any two agree together, I shall also presen my *Hypothesis* among the rest, not going out of my way, nor farr from the Text to produce it; which is this. As I suppose, that Rivers run from the higher parts of the Earth, so also that the Main Ocean into which they run is some lower part of the *Cortex* therof, which is the fittest *Alveus* to receiv it; and therefore it is called the Deep: and though I know not how deep the *Fundus* therof is, yet certeinly it must be farr deeper then any of the Narrow Seas, which run into it, otherwise they could not so run into it; and the Narrow Seas must also be deeper then the Rivers which run into them: and they not only run one into another, but with such a force and Current as doth plainly declare a proportionable Fall. And while the Rivers so run into the Sea, yet the Sea is not full; and all these Waters certeinly do

not

not ſink into the Earth below the *Fundus*, or into any vaſt *Barathrum* therof, which would long ſince have been filled, but apparently they Flow and Reflow continualy: nor are they Imbibed by the Shores, or Abſorbed by Evaporation, which is continualy according to that Reciprocation of Waters and Vapors that I before deſcribed, and any Inequality therof can make very litle or no difference in this caſe. Alſo we know that Water Impelling Water by Fall or Force, if it hath no Vent or farther Paſſage, will cauſ the Water ſo Impelled to riſe before it; becauſ the Impulſ driving it forward, and conſequently hindring it from flowing back, when and where it is ſtop'd, muſt cauſ it to riſe and ſwell. Thus the Rivers runing forcibly with ſuch an Impulſ into the Narrow Seas, and they into the Ocean, beyond which they do not, nor cannot paſs, do certeinly cauſ it to riſe and ſwell toward the Midle by ſuch Motive Impulſ and Current of all the Rivers and Narrow Seas on every ſide therof; and then when it hath ſo raiſed the *Pondus* of the Water ſomwhat above the Levell of the Ocean, and ſo farr, as it can raiſ it no higher; when that prevails againſt the Impulſ, and the Water of the Ocean begins to fall again, it will drive all the Water between (being a Voluble and Undulating Body) as faſt and as farr back again; becauſ it was Equivalent to the Impulſ which ſo raiſed it: whereby the Water between the higheſt Watermark of the Ocean (to which it did ſo riſe and ſwell, and from which by reaſon of the greateſt *Pondus* therof it began to fall back) and the higheſt Watermark of the Rivers, to which it can ſo fall back, reflows into the Narrow Seas and Rivers accordingly: that is, above the Levell in the Rivers, as it before proportionably roſe above the Levell of the Ocean: becauſ, as I ſaid, it is a Rowling and Fluctuating Motion, which will ever be Reciprocaly higher at each end, like the ſhorter Vibrations of a *Pendulum*: and it doth not raiſ it ſo high as the Springs, from which the Fall of the Rivers firſt began; becauſ the Fluctuation doth not reach ſo farr, forward, or backward; and probably ſo much Water as is beyond the higheſt Watermark of the Rivers in the Canales therof, and from thence to the Springs, is by Evaporation continualy Exhauſted from the Sea; which returning to the Earth doth ſerv continualy to ſupply the Rivers, though more or leſs, according to the Operation of the Æther and

Planets,

Planets, eſpecialy the Moon, which cauſ and regulate the Evaporation; but generaly ſo as the Sea is never full, nor the Rivers empty: and by this Conſtant ſupply of the Springs and Rivers there is accordingly a Conſtant Fall of the Waters one way, and an anſwerable Return therof by the *Pondus* of the Water of the Ocean ſo raiſed thereby, as I have ſhewed, the other way: as if we ſuppoſe a *Pendulum* having a Conſtant and almoſt equal Impulſ added to it one way, and ſo Impelling it in every Vibration, it will certeinly ſo return by its own *Pondus* and thereby Conſtantly and Equaly Vibrate. And this I conceiv to be the account of Tides generaly; though there are many particular Variations therof, both Ordinary, as the Menſtruous; and Extraordinary, as Annual, and Caſual: and I ſuppoſe the Menſtruous, and indeed the Diurnal Variation of the Tides therin, to be from the Moon; not that they do follow her Courſ, which is from Weſt to Eaſt, for ſo plainly they do not, the Flux and Reflux being from all Shores to the Ocean, and back again: but as I conceiv, that as the Sun raiſeth thoſe Dry Vapors or Fumes, wherof I before diſcourſed, by his vehement Heat; and which cauſ no ſuch Increaſ of Waters, as I before mentioned; ſo the Moon by her more moderate Heat principaly raiſeth thoſe Moiſt Vapors, which ſo return into Waters, and cauſ the Increaſ therof: and this Influence of the Moon is ſufficiently known in many other Inſtances, but moſt eminently in Tides, which accordingly obſerv her two *Apogæa*, when ſhe is fartheſt from the Earth, and her Heat then moſt moderate; and ſo the Tides are then higheſt when ſhe is New in her firſt *Apogæum*, and Full in her Second, every Month, and ſo proportionably every Day between them. Thus I have briefly delivered my Conception of this great *Arcanum*; which I ſhall leav to be farther examined by others, eſpecialy the moſt expert Navigators; and deſire them to try it by theſe *Criteria*: Whether the Tides do not Impell the Main Ocean from both the oppoſite Shores at the ſame time? as moſt probably they ſhould; becauſ the Impulſ of the Rivers and Narrow Seas will not laſt ſo farr, and ſo long, as to drive the Water from one Shore to another croſs the whole Ocean, nor perhaps very farr into it; but rather by driving it from both the adverſ Shores at the ſame time they make the Ocean to riſe and ſwell a litle toward the midle; as if ſeveral men with Brooms, or the like, at the two ends of ſome long Chanell,

ſhould ſweep the Water therin forward both ways, following cloſe after one another, it will thereby be Impelled, riſing and ſwelling toward the midle; and when they ceaſ, by its own Weight, fall and return both ways back again. Again whether Tides be not leſs, and leſs, toward the midle of the Ocean, and about the midle, perhaps Imperceptible, from which the Rivers and Narrow Seas Impelling it are fartheſt, and ſo their Impulſ more, and more, abated; and the Water driven before them ſtill riſing and ſwelling, the Weight therof is increaſed; which at length makes the Return therof back again into the Narrow Seas and Rivers? Alſo whether there be any Perceptible Tide in Narrow Seas and Rivers between ſuch Tracts of Land which are moſt longinquous and fartheſt from the Ocean? or whether they are not proportionably leſs, and leſs, as they are farther from it in any Parallel of the Earth? becauſ the *Pondus* of the Water riſing and ſwelling therin, as I have ſhewed, and thereby returning the Waters back again, doth abate by degrees, and may not reach ſo farr as ſuch longinquous Seas and Rivers. Laſtly, I deſire it may once be aſcerteined by them, whether indeed there be any ſuch Circumterranean Tide, or Courſ of the Main Ocean from Eaſt to Weſt, as is commonly ſuppoſed? which certeinly is contrary to the Courſ of the Moon, nor do I find any ground or reaſon in my *Hypotheſis*, that might induce me to affirm it; nor can the ſuppoſed Motion of the Earth ſolv all the Tides every way. And this Circumterranean Sea is the Main Ocean that I intend, and which, as I conceiv, is chiefly intended by the Congregation and gathering together of Waters, mentioned in the Creation therof, to and from which the Rivers thus flow and reflow, and though it cannot return to cover the Earth, as it did in the firſt *Chaos*, or ſince in the Deluge, yet as a *Faſcia* it ſtill enviroueth it round about, and is the great Province of Elementary Water. Extraordinary Tides are not ſo conſyderable, being Various and Caſual; and as they proceed from no ſuch conſtant and certein Cauſes, ſo they have no ſuch certein and conſtant Courſes. The Annual Tides are obſerved by us in our Southern Coaſt to be generaly greater about *November*, and *February*; and accordingly we obſerv that about *November*, when the Heat of the Summer is paſt, and the Earth is filled firſt with Water; the Springs begin to riſe, as we ſay, in Fountains, Wells, and Ponds,

Ponds, and apparently are seen to peez, as we term it, out of the Banks into Ditches, and to run more freely in Rivers; and so again about *February*, (which is commonly said to fill the Dike) after the Earth hath been bound with Frosts, and is fully thawed, and the Waters begin to run more freely, whereby they cause such an Impulse therof; which proceeds from such more general *Confluvia*, and sudden Fluxes; and so sudden Inundations may cause some Temporary Tides in some places, but the Universal Deluge was Immediately by the Divine Power, and Providence, as God saith therof, *Behold I, even I, do bring a Flood of Waters upon the Earth:* which whether it were by producing all the Moisture in the Pores of the Spongy Earth (which certeinly if it were all gathered together would make another great Sea) and making it Miraculously to flow upon the Surface of the Earth instead of being imbibed by it, as it is now a constant Fountain to supply the Rivers, and Seas Naturaly, (and so may be conceived to be these Fountains of the great Deep which were broken up) and by resolving all the Vapors and Fumes in the Air into Cataracts of Rain, and so also opening those Windows or Floudgates of Heaven, or otherwise, I will not presume to determin; becaus it was Miraculous, and Preternatural. But there are some litle Tides and *Euripi*, so very strange and wonderful, as have puzled the greatest Philosophers, and I know no Colorable reason or account, which any have ever yet given therof; nor am I such an *Oedipus*, as to unfold these Ridles of Nature, which though they seem to be her ludicrous Disports and Galliards, yet certeinly are according to some Harmonious Measures, of answerable Causalitys; though we may not hear them or do not hearken to them. Concerning which I shall only relate an Experiment, of which I must freely say, —— *Non inventa reperta est:* for I confess I received it from another, who declared to me the Matter of Fact that he had done it, but was not pleased to revele the Secret how it was done, which yet after I had found out he acknowledged unto me to be the same. The Invention was to make a Waterdial, wherin the Water should rise and fall every twelv hours, in this maner. Let there be a Font or Basin of the Dial made with a Hole at the bottom, and let there be a Pipe open at each end, wherof one end must be applied to a Subterraneous Spring, or the like Flux of Water, and the other end closed to

the Hole in the bottom of the Basin, so as the Water may descend from the Spring (being as high as the top of the Basin) to the Hole in the bottom, and through it reascend in the Basin in twelv Hours: and as it so ascends by degrees every hour describe Lines in that side within the Basin: And at the twelfth and last Line make another Hole in the other side of the Basin, and let a *Siphon* be inserted toward the top of the Basin, and closed to it, so as the Water in the Basin may fill the shorter Leg therof hanging down to the very bottom of the Basin, and just turn over at the *Vertex* of the *Siphon*: and the Cavity of this *Siphon* must be doubly as capacious as the Cavity of the former Pipe, so as to convey away doubly as much Water in the same time by the longer Leg therof out of the Basin, as ran into it through the Pipe; whereby though it continue still to run through the Pipe from the Spring, yet the Cavity of the Pipe being only half so capacious as the Cavity of the *Siphon*, it can run in only half so fast by the Pipe as it runs out by the *Siphon*; which will be sett on runing by the Water ascending into the shorter Leg therof within the Basin, when it rises to the Line of the twelfth hour, and there turns over at the *Vertex* into the longer Leg without the Basin, and that will carry it away doubly as fast, untill the *Siphon* be emptied; and consequently cauſ the Water to descend in other like twelv hours: which must also be noted by Lines described on the other side of the Basin: and when the *Siphon* is empty it will ceas runing; and then the Water runing through the Pipe only will ascend into the Basin in other twelv hours, as before, and so continualy. But becauſ it is somwhat Curious and difficult exactly to make the Cavity of the *Siphon* doubly as capacious as the Cavity of the Pipe, a Stopcock may be inserted into one, or both of them, whereby the just proportion of Water in them may be accordingly regulated. Now, though I can neither affirm, nor do I know, that there are any such Fonts, Urns, or Caverns, in the Earth, so disposed as in this Experiment, whereby the *Euripi* are caused, yet I know that it may possibly be so; and if not, yet I am assured that both this and any other Regularitys in Elementary Nature, wherin there is neither *Plastes*, nor Artist, must be by some answerable Causalitys; which I leav to others more particularly to Investigate.

V. The

V. The Earth which is laſt and loweſt of all the Elements hath a moſt Denſ Body of Matter, though the leaſt Active Spirit; and ſo every Element hath a leſs Denſ or Groſs Body of Matter accordingly as the Spirit therof is more Active; and Vegetative Spirits are leſs Immerſed in the Matter then Elementary, and only by the Mediation of them; and Senſitive leſs then Vegetative, and only by the Mediation of them, and Elementary; and Intellective, which we therefore call Immaterial, not at all, as I ſhall ſhew heerafter. Now as Æther is the moſt Rare of all the Elements, and ſo as I ſuppoſe the Body therof cannot be made more Rare by any other Elementary Spirit, becauſ there is none other that is more Active, and which may more Rarefy it; ſo Earth is moſt Denſ, and as I ſuppoſe the Body therof cannot be made more Denſ by any other Elementary Spirit, becauſ there is none other leſs Active which may more Condenſate it then it doth itſelf: for as theſe Elementary Spirits do require more or leſs Rare or Denſ Bodys, ſo they do Naturaly and moſt Effectualy cauſ them; and thus the moſt Rare Æther, which is Utmoſt, and the moſt Denſ Earth, which is Inmoſt, do contein and bound the two other more Variable Elements, Air, and Water, between them, as I have ſhewed. The Rarity of Æther is altogether unknown to us; but if it be, as I ſuppoſe it, more Rare then the moſt Rarefied or Expanded Air, and the very common Air be a thouſand times more Rare then Water, and that fourteen times more Rare then Mercury, and the Elementary Earth (wherof we know not the utmoſt Denſity, as we know not the Rarity of Æther) yet more denſ then it or Gold, (which is ſaid to be nineteen times heavier then Water) or any other Cortical Earths whatſoever, then certeinly there is a vaſt Diſproportion of Denſity and Rarity between the Bodys of Æther and Earth: and yet though Earth be moſt Denſ, Æther is not moſt Rare, nor do we know, or can aſſigne how much more Rare Superæther may be then it; which will Multiply the Diſproportion exceedingly more, wherof though we can give no juſt account; yet heerby we plainly perceiv how ſtrangely Matter may be Denſefied, or Rarefied; and conſequently what vaſt or Innumerable Pores, or Spaces, they muſt aſſigne, who will ſtill contend that Rarity is only from Poroſity, or Vacuity. As in Water, ſo alſo in Earth, there are two diſtinct

Regions; not only Mathematicaly such, as some have made, both in Æther, and Air, where they are not; but Physicaly such; and yet they have not found them out where they are: for as there are Waters above, and beneath, so there is manifestly both a *Cortex* of the Earth, wherin there are not only many other *Compositæ*, and many sorts of Earths, Metalls, Minerals, Stones, Chalk, Clay, Marl, Loam, Sand, and several others, which thereby discover and declare it not to be the very Elementary Earth, but also Water flowing in the Canales therof and imbibed by all this Spongy *Cortex*, whence it is denominated Terraqueous, and is almost as much Elementary Water, as Earth: nor is any part therof in itself so purely Elementary Earth, as the Ocean is Elementary Water; wherefore there is most probably another Elementary and Subcortical Earth, (or as it is said, *Foundations of the Earth*) which though we know not where it begins, and the *Cortex* ends, yet I presume it to be below any the lowest *Fundus* of the Water, or descent of Rain or Dew; otherwise it should not be the Elementary Earth, which seems to be intimated by that expression of the Psalmist, *Then the Chanells of Waters were seen, the Foundations of the World were discovered.* Nor may we reasonably conceiv that there are below the *Cortex* any such hid Treasures of Metalls, Minerals, or the like, as there are in it; since they can never be searched or digged out by any Industry of Men or Beasts, wheras God and Nature made nothing in vain. But that which doth most confirm me in this Opinion, is the most Ingenious Invention of the Inclinatory or Dipping Needle, as they call it; for most evidently that varys its Position respectively, as it is neerer to, or farther from, either of the Poles of the Earth, and not according to the Poles of the World: which very sensibly discovers that there is such a Subcortical Earth; and also that it is Magnetical: for though there be Rocks of Magnets in the *Cortex*, yet this Inclinatory Needle, as I shall call it, doth not so Incline unto them, but generaly to the Poles of the Earth, as to one great Magnet, and exactly so as a Needle carried about a round Magnet or *Terrella* doth Incline itself in all the Points of the Circumference, as I shall shew heerafter: and this also shews that the Elementary and Magnetike Earth is Globular, as well as the *Terrella*; otherwise any Eminences therin would vary the Inclination, as well as in the *Terrella*. Yet I do not conceiv that this Elementary Body of the Subcortical Earth, which I call

call Magnetical, is of the same kind with any Cortical Magnets; as they are not of the same kind with Iron Stone, or Mine, though both have a Magnetike Quality: but rather that it is farr more Dens then them, as I have said, as it is also farr more Consistent then Gold. Nor is it vain or useless (as other Terreous *Composita* below the *Cortex* should be) but very proper and requisite in every respect: for as by the most solid Consistence therof it becomes the Foundation, and *Basis* of the *Cortex* (as they are therefore termed *Strong Foundations* and *Pillars of the Earth*) and indeed of all the Superior Spheres, and of the whole Body of the Universal Globe; so by its Magnetical Polarity it doth continue its own Body in one Immovable Position, as I shall shew heerafter: and most probably it hath no Pores whereby it may be penetrated, convelled, or comminuted by any others, or one part therof severed from another; and so many Bodys in the *Cortex*, Marble, Glass, Gemms are Imporous, as I have shewed, much more this most Dens, Compact, and Adamantine Body of the Elementary Earth. And though some Planets and the Starrs may be greater Orbs then it; yet they are not such Foundations and Pillars of the World, nor is there any other such Centrical Orb relating to the Circumferential Orb, or whole Globe of the World, besides the Earth; which therefore also is called *Orbis*, and the World, whereof it is an *Epitome*; and all the Superior parts of the Globe of the World are only Concave Spheres. Thus though Earth be most Base and Brute of all the Elements, yet it hath also its proper Excellency and Glory, having the greatest Bodily perfection of the Density of the Matter, to which it doth most approximate; and the Spirit therof hath the greatest Stability and Fixative Strength, though the least Activity: and as I have observed, it hath also such Qualitys in itself, whereby in Mistion it doth Fix almost all the more Agile Qualitys of the other Elements: and the *Cortex* therof hath the greatest Mistion with them all, and the greatest Variety of *Composita*, being the Native Country and Region of all Vegetatives, and of Beasts, the best of Sensitives; yea the Manor houf and Demesnes of Man, as it is said, *The Earth hath he given to the children of Men*: and becauf this whole Spectable World, which *Moses* describeth, was made for him, and all the other Elements are as it were his Roialties, there-

therefore they all point to the Earth, as the Circumference doth to the Center, and are Inservient to it, as that is to Man.

VI. The First or Principal Quality of Earth is Drines, as I have shewed, which is contrary to Moisture, as Cold is to Heat. But as the Earth is the most Brute and Dull Element, so are also the Qualitys therof like unto itself; and it is heerin most Analogous to the Passive Matter, though it be in itself a Spiritual Substance Genericaly different from Matter, as well as any others: for there are such Analogys in Nature, not only beeween Spirits, but also between them and Matter, as they are all Entitys, and Substantial parts of the Univers, though several Classical Natures differ Classicaly, and Specifical Specificaly, and Individual Individualy; and these Differences are their proper Bonitys, whereby they excell all others, though otherwise generaly Superior to them, as Matter is better Matter then any Spirit, and so Earth is better Earth then Æther; though the Spirit of Æther otherwise be Superior to the Spirit of Air, and of Air to Water, and of Water to Earth, according to the Order of the Elements which God hath declared, in the Creation therof. And accordingly the Spiritual Qualitys of Æther are more Active and Powerfull then of Air, and of Air then of Water, and of Water then of Earth. Yet; as I said, Drines is an Active Quality, and Actively contrary to Moisture, and not any less Degree therof, and much less only a Privation of Moisture; and though Moisture doth more notably Operate in and upon it, as Heat doth upon Cold; and if it be weakned by Comminution into Dust, or Ashes, and the like, it seems not much to Resist, but rather to Imbibe Moisture, and almost to be Receptive of it; as Matter is of Spirits; yet there is some Mutual Operation, as well as Active Contrariety between them; and so Earth itself is called Dry Land, and contradistinguished from Water in the Terraqueous Globe of them both: and it is known accordingly to Operate by Drines, both to Physicians in their Desiccating *Emplastra*, and to Mechanikes in their Cementations; and that Desiccation is not only by Evaporation or Exclusion of the Moisture, but also by Mistion of both, and Predomination, and Prevalence of the Drines over Moisture; for so in the utmost Aduction of Ashes,

Ashes, or any *Terra damnata*, there is Water, and consequently Moisture in the Mistion therof, which yet is not Actual, but reduced to Potentiality by Drineſs: and apparently in Congelation of Ice, Glew, Metalls, and the like, there is Water, and so Moisture Potentialy, which is again Actuated by Fusion, but is not Actual before they be melted. And, as I said, Moisture, and so Drines, are Indifferent between the other two Qualitys, Heat, and Cold, and they between Moisture, and Drines, and they are no Secondary Qualitys each of other, but Operate only by themselvs Univocaly and Efficiently; for as Heat only doth heat, and Cold cool, and Moisture moisten, so Drines, and no other Quality but that, doth properly dry; though Equivocaly or Instrumentaly either Heat, or Cold, may dry, as I have shewed. And as I have observed of Heat, that being the most Active and Predominant of all the Elementary Qualitys, it hath also the most Confinements, Imprisonments, and Restraints, and several ways of Reducing it into Potentiality, as I have formerly shewed, farr more then Cold, which thereby hath such advantage against it; so hath Drines against Moisture by the very Cession therof; for though Drines cannot easily Profligate it, yet is it Naturaly so very Fugitive of itself, that it is still Flying away; wheras Drines is more Fixed, and much assisted therin by its own Connatural Quality of Consistence; so that there is not any Body Dry, which is not Consistent, nor Moist that is not Fluid: and yet Consistence is a several and distinct Quality, both from Moisture, and Drines; becaus they are Actively contrary one unto another; but neither of them to Consistence, nor Consistence to them.

VII. As Drines and Consistence are not one and the same Quality of Earth; besides which there are also many other Qualitys therof, as Magnetike Virtue, and the like; and so Heat, and Light, of Æther, besides many other Qualitys therof, as Planetary Virtue, and the like; so likewise are there several Qualitys of Air besides Cold, and of Water besides Moisture, which though unknown to us what they are particularly, yet do generaly appear in the many various Mistions of all the Elementary Bodys; and that want of a more particular knowledg therof is a chief caus and reason why we know so litle of Elementary Mistions: wherefore I

have begun to pry into them, and advanced some few steps toward them, to shew the way to others; and though I may by some be judged to be too Curious heerin, yet I am confident that there are such other Qualitys of every Element, besides those which are commonly called First, and that I have sufficiently made it to appear that they are such as do not, like Second Qualitys, subsist Immediately in the First, and Mediately by them in the Substantial Spirit, but every one of them Immediately therin, as well as another: and so I conceiv Consistence or Firmnes and Drines only to be Connatural Qualitys of the same Element of Earth, and that Consistence doth Immediately Subsist in the Elementary Spirit therof, and not in Drines; as Fluidity is not from the other Qualitys, but rather from the Matter, for so indeed all the other Elements are Fluid; and Consistence is a proper and more particular Property of Earth alone; which hath no Contrary, as Drines hath, nor doth contrarily oppose any one Quality of the other Elements; but only is that whereby the Elementary Spirit of Earth doth render its own Body Firm and Solid, so as no other Elementary Spirit, not having any such Quality, can Confirm or Consolidate its own Body, which therefore remains Fluid and Weak, as the Matter itself. And this Terrene Consistence as it is not only Drines, nor any Second Quality therof; so much less is it Density (for so Mercury is Dens but not Consistent) though that also be assistant to it, as well as Drines; for Density, as I have shewed, is not any Active or Spiritual Quality, but only an Affection of Matter itself, superinduced or varied by the Densefaction of Spirits, and Spiritual Qualitys; as Figure, which is plainly an Affection of the Matter, is superinduced and varied by the Spiritual Qualitys: and therefore Density and Consistence are as different, as Matter and Spirits, wherin they do respectively Subsist: and as I have thus distinguished Consistence from other Qualitys or Affections of the Spirit and Matter of Earth, that thereby we may more discern it, so I shall now shew that it is a Spiritual Quality, and particularly what it is; becaus I do not find it to be sufficiently explained by others; and becaus indeed it is a very Noble Quality of Earth, and of great Mechanical Use: for it is not only a Compaction and Consolidation of all the parts of the Earthy Body, but, as it is also termed, a Firmnes or Stability of the whole Body therof, both

which

which I comprehend under the name of Consistence; whereby I also intend that Strength and Rigor of the Consistent Body, which though it be no such Vigor or Force whereby it can Move other Bodys, like the Angelical Powers, nor its own Body, as Material Spirits, nor yet like the Motion of Matter to Union or Station, (whereby indeed Matter Moves itself, but without any Activity or Strength, only by a Recumbence or Succumbence, as I have shewed) and so Fluidity is only an Inconsistence therof, or Falling every way, without any Consistent Strength, or Stability holding it together; whereby it doth plainly appear that such Motion of the Matter, as well as of Fluid Bodys, is not from any Spiritual Activity or Vigor, but contrarily from Infirmity and Weaknes of the Bodys themselvs: yet Consistence doth Spiritualy and Actively Unite and Contein all the parts therof, and also Arrect and Fortify the whole Body, having a proper Center therin, as all Spirits and Spiritual Qualitys have, without any respect to the Center of Matter; which, as I have shewed, is the Universal Center of the whole Body of the World: and so a Timberlogg floating upon Water, or suspended in the Air farr enough from that Universal Center, yet hath in itself a Center of its own Consistence, where it is strongest, and is most hardly Bent or Broken, and from which it proportionably extendeth that Strength or Rigor through all the parts therof unto the Extremitys, and so this Consistence therof is Mechanicaly useful to make it a Boat, or Beam of a Balance, which though it be suspended in the more Rare Air only at the Center, yet by this Strength and Rigor all the other parts therof being so Consistent in the whole (though otherwise hanging freely in the same Air) are Arrected and upheld from falling or bending downward, as otherwise they would; and though the parts therof weigh most toward the Extremitys, becaus Gravity is an Affection of the Matter, and therefore weighs most downward in the Extremitys, which are fartheſt from the Center of the Consistent Strength, which is a Spiritual Quality; yet that is strongest in the Center, which is most opposite, and fartheſt distant from the Extremitys; and plainly shews that Consistence is not Density, nor Gravity, which Subsisteth in Density, and that any bowing downward in the Extremitys is rather from the Fluidity of the Matter, whereby all the parts of that Wooden Balance would flow downward, like

Water, if they were not so upheld by Terrene Consistence. Nor doth Matter Move from, but toward the Center; wheras Consistence, as all other Spiritual Qualitys, issueth forth from the Center to the Extremitys, though it be stronger in the Center then in the Extremitys; which Matter is not, as it is Matter; for it is not more Heavy, nor doth it Move more strongly, or rather swiftly as it is neerer to the Center, by reason of the Center; but by reason of the longinquity of the Motion; which would be the same, whether the Body Move in such a Space, and through the same *Medium*, farther from, or neerer to the Center; and so the Weight of a Clock doth not Weigh more, or Move faster when it is almost down, then at first. Also Consistence, which is a firm Union of all the Parts in the Whole, may be such to the Parts in their Private Whole, as Station of Matter is to itself in the Publike Whole therof: for so it keepeth the Parts of any Fluid Body within a Consistent Vessel in Rest, as I have formerly shewed; becaus the Consistence is a Fulciment, which is *quasi* a Center unto them, and wherupon they rest as well as in the Natural Station of a more Rare above any more Dens Body, or as they would if they were Immediately next to the Center. Again, Consistence, which is a Spiritual and Active Quality only for the Fixation of its own Body, hath, as I said, no Contrary; being heerin like to Magnetical Virtue, which is for the Polar Position of the Body: for Fluidity, as I said, is only an Inconsistence and Infirmity of the Matter, which is not a Contrary, but a Negation of Consistence: and though there be an Universal Union and Coherence of the Matter to and with itself in the Whole, yet there is also such a Mobility of the Parts therof within that Whole, that they will easily be removed, and flow any way, unles they be made to Consist by this Spiritual Quality of Earth; and no other Elementary Body doth Consist by any other Quality of the Spirit therof, but only by this Spiritual Quality of the Earth that is in the Mistion therof: and accordingly Water, which hath more of Earth in the Mistion therof, doth Consist more then Air, and Air then Æther, as I have shewed: and so Terrene Bodys do more Consist as they are less Mist with the other Elements. Nor is the Incoherence of many Terreous Corpuscles, Fluidity, though it seem to be Complexively such; for every Corpuscle therof Simply is Consistent in itself, (as I have before observed of Porosity) and so though there be many Sands in an heap, yet every

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one of them in itself is as Consistent as a Sandstone, and Dusts of Steel, or Brass, as the Steel or Brass itself: and though by Commotion therof there may be a Motion every way like the Motion of Fluid Bodys, yet that is not from the Consistent Corpuscles, or any of them in themselvs, but from the Interspersed Fluidity of Air; as if there be Innumerable Terreous Motes in Water, unles they be Mist and made into a Past, the Water in itself is not thereby made more Consistent. But Bodys which have a Consistence in themselvs, and have also other Fluid Bodys Interspersed, are made more to Consist in and with themselvs, by exclusion of the Fluid Bodys out of their Pores; as a Cable being stretched very stiffly will be made to Consist almost as much as Wood, and so is used by *Funambuli*; for by stretching the Air is excluded, and the Pores are drawn together and Contracted: and a Wett Cable will be farr more stiff of itself, and not so easily stretched as a Dry; becaus, as I said, Water hath more Consistence then Air, and is not so easily excluded or squeezed out of the Pores; also it is more Imbibed, and thereby more Mist with the Terreous Body of the Cable, then Air, and therefore not so easily Extruded. But heer I must observ, that as it is a general Rule and Canon of Nature, that in all Spiritual Powers and Operations Union doth fortify, so it is most sensibly evident in Consistence; which though it be the same in every Corpuscle, as in any equal Part of a greater Body of the same nature (as it is in a Pinduſt as well as in such a small Part of the greater Body of Brass from which the Dust was decided, as I before shewed) yet all the Parts of the greater Body being united together do proportionably more fortify themselvs, and the whole Body is thereby made more strong in every equal Part therof, then the Corpuscle decided from it: and it were more then a Curiosity, and of great Mechanical Use, to find out the Increment of the Strength of Consistence according to the Majoration of Consistent Bodys: for certeinly the Total of the Strength of the greater will be found to be more then the Addition of so many Units, as there are Parts in it equal to the Corpuscle decided from it. As a Barr of Wood one Inch square will bear about eight times so much Weight, as if it be equaly divided into fower quarters, any one of those fower quarters will bear; though that hath a fourth part of the whole Magnitude of the other: whereby it appears that the Increment

of the Consistent Strength therof is about doubly as much as the proportion of the Magnitude; though I do not conceiv that it alway so doubles, but that where the disproportion is greater of the Magnitude, it will be greater also of the Increment, and where less, less. As suppose the Barr of Wood an Inch Square and a yard long, and being equaly supported by Fulciments at the Extremitys to bear two hundred pounds Weight hanging at the Center therof, and a Barr of a fourth part of the Magnitude therof to bear a quarter of one hundred pounds Weight, so that the greater Barr bears eight times as much as the less Barr, which yet hath a fourth part of the Magnitude therof; then also suppose another Barr two Inches square, which hath fower times the Magnitude of the Barr an Inch Square, the Increment of the Strength therof must proportionably be doubled in respect of that, as the Increment of the Strength of that was in respect of the other, and consequently, if the Barr of an Inch square did bear two hundred, as I supposed, the Barr two Inches square must be supposed to bear sixteen hundred pounds Weight; that is, fower two hundreds doubled, as the Barr an Inch square did bear two hundred; that is, fower quarters of one hundred doubled: now the proportions of Magnitudes between these three Barrs are, as I said, of the least to the midst as one to fower, and to the greatest as one to sixteen; and the Increment of the midst in respect of the least is as eight to one, which is doubly fower; and of the greatest in respect of the least, as sixty fower to one, which is fower times sixteen. Also it may be tried in Barrs of other Figures; as of round Barrs of an Inch Diameter, and Triangular Barrs of an Inch Perpendicular, and any other Regular, or Irregular Polygons: as a Barr half square and half flatt, or an Inch one way, and half an Inch the other way, and how much it will bear one way, and how much the other way, and the like: and I shall propound it to be examined by Mathematicians and Mechanikes, whether in all cases the Increment of the Strength of the greater Consistent Bodys be not proportionably according to the Increment of the *Superficies* of the less Bodys? as the midle Barr being an Inch Square, the fower Lateral *Superficies* therof made only fower Inches; wheras every one of the fower least Barrs being half an Inch square, the fower Lateral *Superficies* therof made two Inches; and so of all the fower least Barrs, whose whole

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Magnitude is equal to the midle Barr of an Inch square, eight Inches; wheras the fower Lateral *Superficies* of the midle Barr made only fower Inches, as I said, and so of the other; wherin the Decrement of the *Superficies* therof is double, and also the Increment of the Strength of the Consistence therof double: Now though there be, as I have shewed, an Increment of the Velocity of Motion, and accordingly of the Gravitation or Descent, and Percussion of a Scale or other Body, by the *Pondus* of the Matter (whereby the Increment of Velocity may be tried) yet that is by several Degrees Successively Actuated, wheras the Increment of Consistent Strength is present and Simultaneous. And heerin may plainly appear another difference between Matter and the Affections therof, and Spirits and their Spiritual Qualitys: for though Matter by Union doth fortify and defend itself in the Whole against any Nonentity, as I have said; becaus the Extension therof, being Quantity Consistent (which is the only Consistence of Matter) must Consist together through the whole Quantity of the Universal Body therof, as the Extension of any Particular Body must Consist and be Continued through all the Parts therof; otherwise it should not be the same Extension as it is: and therefore though one Part may be removed from one Place in the whole Body of the World to another, yet another Part must necessarily succeed, to Continue the whole Extension therof, and thereby to render the same whole Body Complete and Intire, and the whole Extension therof Consistent: yet the Union of Part to Part, though never so many, doth not make any Increment of the whole Extension above the Total of all the Proportions of all the Parts; and so an hundred several Weights of one pound of Lead, being melted or otherwise united together, will not weigh in all more then one hundred pounds; or if the same Matter in a greater Extension be Condensated into a less Extension, it weighs only according to the Mass of the whole Matter, and not according to the Extension; and therefore is the same, whether the Extension be greater, or less; though as it is so much Matter in a less Extension, it will penetrate and sink through an equal portion of Matter in a greater Extension, as I have shewed: but yet doth not by such Condensation acquire any greater Gravity in itself, then proportionable to the whole Body of the Matter; as we say, that a pound of Feathers

Feathers is as heavy as a pound of Lead; though the Lead will press down the Feathers, and not the Feathers the Lead, in respect to one another and their due Station and Position in the Universal Body of Matter, as I have declared: whereas this Terreous Consistence being a Spiritual Quality gaineth an Increment of Strength in itself by such Physical Union above the proportions of all the Parts United or added together Arithmeticaly; and so Fire of so many equal Parts United together Physicaly into one Body will heat and burn more then so many several Sparks equal to those Parts, as being United or added together Arithmeticaly will amount to an equal Total. Also a Wire of Iron may be made so small and so long as that it will not bear its own weight at the Extremitys, and Glass so Capillar, as may be wound about the finger, though Glass be very fragile. And though I conceiv Hardnes and Softnes to be only different Sensibilitys of Consistence or the degrees therof, as more Consistent doth more resist the Touch, and less less; yet Fragility and Ductility are different kinds of Consistence itself: for Consistence hath both a Strength and Rigor of the whole Body, which Fragility also hath, and Ductility hath not; and likewise a Spiritual Cohesion and Tenacity of all the parts therof, which Ductility hath, and Fragility hath not so perfectly as proper Consistence: and therefore Fragile Bodys, as Glass, are easily Broken, but will not so easily Bend; and Ductile Bodys, as Wax, will easily Bend, but are not so easily Broken: nor indeed do I conceiv any Body to be properly Consistent, and such as will neither Break nor Bend, except only the Subcortical Earth, which is Elementary, and hath the proper Qualitys therof in their greatest Actuality; as Æther hath Heat, and Light: wheras other Cortical Bodys, though most Rigid, as Iron, and the like, may be Broken, or Bent; yea by Fusion become Ductile and Fluid: so that Ductility is partly from Moisture; and is only an imperfect Consistence, which though it be not the same with Drines, is very much assisted by it, as I have shewed. Also Fragile Bodys of less Crassitude may Bend more, as I said before of very slender Glass; becaus there is less Distortion, that is, less Expansion in the outward Convexity, and Compression in the inward Concavity of the Arch, or Angle, that it makes in Bending: and the very Bending before it Breaks shews that there is some Ductility in it, which is an Imperfection

of

of Consistence: and this doth plainly appear in Glass heated, which is farr more Ductile, and molten, which is Fusile: whence also it hath that other Imperfection therof, that is, Fragility, which it betrays when it is cooled: but I conceiv that Fragility is a less Imperfection of Consistence then Ductility; becaus that appears in Actual Drines, and this in Actual Moisture. And Fragile Bodys, though somwhat Flexile, yet, if they be not over-bent, will return again very smartly to their Position, which we call Springines, and will not stand bent, as we say, as Ductile, unles the Rigor (which is properly every way, as it were, by so many *Radii* from the Center to the Circumference) be overcome by long continuance. And this Springines is only a Return to the Position of the Consistent Body; (and not as Elastical *Potentia*, which is to the Density or Rarity of more Fluid Bodys) according to that Natural Rigor, or Temper of Bodys, which the Spirits require, and caus to be in them, and from which they are Violently diverted, and therefore so suddenly and forcibly return unto it again, if the Violence do not continue so long as to caus the very Spirit to conform unto that Figure, as I have shewed, though it will hardly conform to that Temper, in Elastical Bodys: as also Vegetative and Sensitive Spirits will hardly conform to Inorganical Figures. Now Consistence being not a Compound, but Simple Quality of Earth, therefore it doth contein Earthy Bodys together, if they be Continuous, though very various and different *Composita*; for so it conteins both the Subcortical, and Cortical Earth, and all the Rocks, Mountains, and Eminences therof, as one *Compages*: and so Brick, and Mortar when it is dried, do not only Adhere, as Water and Glass, but Cohere and Consist together; becaus though they be several *Composita* or *Mista* of all the Elements, yet their Consistence is common to them all, as they are Earthy Bodys: as Matter doth therefore so Unite itself in all the Bodys of various *Composita* in the World: I have seen an old Brick Chimny undermined and pulled down to fall like a Pillar of Timber without any Breaking; which consequently had one Center of Consistence, that did contein all the Earthy parts therof together, as a Needle hath, which is half Silver and half Steel; and as the whole Body of Matter hath one Center, to which it all tendeth, though varied into the several Bodys of Innumerable *Composita*.

VIII. As Siccity and Consistence are not one and the same Quality of Earth, so much less Consistence and Magnetical Virtue, though that require a Consistence, as Consistence doth Siccity: but, as I have said, Consistence doth only Contein and Arrect the Parts in the whole Body generaly and indifferently every way; wheras Magnetical Virtue doth Direct it particularly in one Relative Place or Position, (which we call Polar) unto North and South; whereby the Difference between Positive Extension in its own *Ubi* and Relative Place may plainly appear: for a Magnet is in its own *Ubi* as any other Body, but besides it hath such a Relative Position, which is Polar, whereby the Polar Points therof, North, and South, are so Directed as that they will not be placed otherwise, and so thereby consequently all the other Points and Parts therof in the Whole, though the Whole be only in its own *Ubi*, as any other Body. Also Consistence is without any Motion, for it is the same whether the Body Move, or not; but Magnetical Virtue hath a Verticity to reduce it to its Polar Position. Again Consistence is Orbicular, as the Strength of a Wooden Wheel is equal at the Extremity of every *Radius*, being equidistant from the Center; but Magnetical Virtue is much stronger at the Poles then at the Extremitys of the *Æquator*, as I shall shew heerafter; and indeed otherwise it should not be so Polar, or North, and South, more then East, and West. Also Consistence hath no Emanation like Magnetical Virtue; and there are many such other Differences. But yet, as I said, Consistence is an Auxiliary Quality therof, being both Connatural Qualitys of the same Element. And so the Elementary Earth probably is most Consistent, and most Magnetical: and the Magnet-Stone is also very Consistent, and so is Iron Mine, and especialy Iron, and Steel, which are the Extractions therof: and I know not whether there might not be some such Extraction of the Magnet Stone more Magnetical then the Stone or Mine therof: but certeinly the Elementary Earth is farr more Magnetical then any other Magnet, becaus it is Elementary; and also becaus it is so vastly great, whereby there is a proportionable Increment of the Virtue: and this is proved by the very strong Emanations therof which penetrate the whole *Cortex* of the Earth; as appears by the Inclinatory Needle; for Magnetical Virtue, like Consistence, hath no Contrary; becaus

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it is only for Direction and Position of its own Body: though Density, as well as Longinquity, may hinder, or abate it, as they do any other Spiritual Powers whatsoever, but not repell, and reflect it. Also the Magnetike Earth by the Emanations therof doth Excite and Actuate the Potential Polarity which is in some Cortical Bodys; as Iron Barrs, which have stood long in a Polar Position, or Iron, and as some say Brick-earth, heated and laid to cool North and South; which is not by any communication of the Magnetical Virtue of the Earth, (for no Accident can so Migrate out of its own Substance, wherin it doth Subsist, into another) but, according to the Doctrine of Potentiality, which I have formerly delivered, by Univocal Generation or Production of the Magnetical Virtue Potentialy being and Subsisting in those less and weaker Magnets into their Actuality. Also if the Virtue of them or the Magnet Stone be Actual, and they laid in a Position not Polar, as suppose East and West, yet if they ly so long, the Magnetike Virtue of the Earth will Predominate, and vary that Polarity to its own North and South, which is very observable; and as it sheweth that the Earth is the great Magnet, which in time can so over-rule all these less Magnets; so also that these less Magnets, or *Terrella*, are such Individualy in themselvs, becaus while they are laid in that Position East and West, which is not Polar, yet they retein their own Individual Polarity, in such a Position as is opposite to the Polarity of the Earth; and though the Earth will at last over-rule them, or if they were freely suspended in the Air they would Naturaly conform themselvs to the Poles of the Earth, yet while they are so Violently laid in an oppolite Position, they still retein their own Individual Center, *Axis*, Poles, and *Æquator*, apparently distinct, and opposite to those of the Earth; and in that Position will turn another less Magnet freely suspended within the Orb therof from the Poles of the Earth to their own Poles. Now that the Earth itself doth never vary its own Polarity, we may sensibly perceiv by these *Terrella*, and their Natural Polarity, and Verticity; as by the Directory, but especialy by the Inclinatory Needle, which being carried about the Earth always Inclines the Southern Pole therof more toward the Northern, as it is neerer to it, and the Northern Pole therof toward the Southern Pole of the Earth, as it is neerer to it, and so accordingly

changes its Poles and Perpendicularity (whence I suppose it is also called the Dipping Needle) and which plainly proveth that the Polar Virtue is not from any North Starr, as some have fansied; for the Southern Polarity is not only a Consequence of the Northern, nor that of it, but both are equaly Polar in themselvs; and the Needle accordingly changeth the Inclination of both its Poles; which also the Directory Needle doth, as farr as it can, by a little bowiug down of its Poles toward one of the Poles of the Earth. Nor is the Polarity from both Northern and Southern *Effluvia*, as others affirm, which cannot penetrate Glass, as Magnetical Virtue doth; for neither is there any penetration of several Bodys, nor is Glass Porous, nor yet Fluid, as Water, or Air, or the like, wherin we may suppose a Cession to any such Imperceptible Corpuscles; which are only the Spawn of *Epicurus* his Atoms, and can never be perceived by Sens in any greater or less Bodys so to pass; nor are any *Phænomena* themselvs, and yet are Introduced to solv the *Phænomena*: and though they be supposed to be so Imperceptibly Minute, yet must not only Move litle Needles, but also contein the vast Magnetike Earth in its constant Polar Position, against all the furious assalts of Air and Water, and the conjoined force of their Storms and Tempests, being such as could easily divert these Corporeal *Effluvia*, and so prevent their *Impetus*; which yet must be supposed to be the same in a Calm or in a Storm, becaus the Magnetike Operations are the same. Wherefore plainly it is a Spiritual Quality Subsisting in the Substantial Spirit of the Magnet, and both Inherent in it, and Emanant from it, like Light, though in another maner, as I shall shew heerafter, and it doth only require Consistence and Drines as Social Qualitys of the same Element, as Light doth Heat; and also Density of the Matter, as they do Rarity; and by the want therof may be Corrupted, as well as they; and so Magnets by Rust, Contusion, and the like, may lose their Actual Virtue, not becaus they are contrary unto it, but becaus they disorder the Body therof, as Wounds do Vegetative and Sensitive Bodys. Certeinly the Magnetical Virtue in a Needle is not from any Northern and Southern Atoms or Corpuscles, for plainly it is Excited by another Magnet Actualy, being what it is Potentialy before in itself: which evidently appears by the very quick and sudden Actuation therof, almost like Heat, and Light, or Sound, and the like, though

though it will last longer in the State of Actuality then they, becauſ it hath no Contrary to oppugn and Corrupt it, like them: and yet rubbing it with another Magnet the contrary way doth aſſoon reduce it to Potentiality, by drawing it from its Polar Longitude, and deſtroying the *Axis* thereof; (and nothing doth more approve the Doctrine of Potentiality then ſuch Experiments) The Magnetical Virtue and Motions therof are moſt evidently diſcovered by the Magnetical Needle carried about a round *Terrella*; for at the *Æquator* it doth apply itſelf Lateraly to the Magnetical *Terrella* and Parallel to the *Axis*, becauſ the *Æquator* of the Magnet, or *Terrella*, doth equaly attract the *Æquator* of the Needle, as alſo the Poles of the Magnet do the Poles of the Needle, when it is ſo applied to either of them. And when it hath paſſed the *Æquator*, the Correſpondent Pole of the Needle begins to Incline, and to point to the Correſpondent Pole of the Magner, and ſo more and more, untill it be Perpendicularly Erected at the very Pole; And it is half Erected, and makes a right Angle with the midle of the *Axis* of the Magnet, though I ſuppoſe not exactly in the midſt therof, unleſs we eſtimate it according to the Oval Arch of the Magnetike Virtue: yet becauſ after it hath paſſed the very *Æquator* of the Magnet, it doth no longer apply itſelf Lateraly, having both its Poles equidiſtant from the Magnet, but preſently begins to touch the Magnet obliquely with one Pole pointing to the Correſpondent Pole of the Magnet, I alſo ſuppoſe, that either Pole of the Magnet doth not attract beyond its own Hemiſphere, Northern, or Southern; (but the Magnet beng Polar doth attract Circumferentialy from the Center) for otherwiſe it ſhould ſtill cauſ the Needle to apply itſelf to the Magnet with ſome part of the Side therof, though leſs, and leſs, and not touch it Immediately with the Pole, untill it be Erected Perpendicularly at the Correſpondent Pole of the Magnet; as if two Chords were faſtned to the two Poles or ends of the Needle, and drawn through Hooks or Staples fixed at each Pole of the Magnet, and ſo the Needle by them drawn beyond the *Æquator* therof, by pulling in one Chord, and letting out the other; yet it ſhould ſtill apply part of the Side therof to the Magnet, though leſs, and leſs, as I ſhewed: but I refer this *Hypotheſis* to more Curious trial and examination. Alſo it may be tried, how much leſs the Attractive Power of the *Æquator* is then of the Poles:

for certeinly the Magnetical Virtue is not equaly Orbicular, but rather Oval, (and that perhaps may discover it, as I before intimated) though we call it an Orb, and it may be so; as there is an Orb of the Emanation of Light from an Elliptical, or other Inorbicular Lucid Body, and yet the Power therof is not equaly Orbicular, as I have shewed: for though the Circumferential Extension from the Center be equal, yet the Circumferential Power in that Extension may be unequal: however it is evident in Magnets that though they be Orbicular, yet their Virtue is Oval; and so in their Orbs of Magnetical Emanations, the Virtue is greater at the Poles, and neerer to them proportionably, and less at the *Æquator*, and neerer to it proprotionably. And not only the Center, but also the Poles are very Points; as may appear by two Needles placed at one of the Poles, which will thrust one against another to attein the very Polar Point, which doth most strongly attract them; and therefore Divaricate at their other ends: as they must according to Statike Law; for there can be no Angular Point of two several Lines concurring in it, without a Divergence of the two Lines from it. Now in this Circular cours of the Needle about the round Magnet it is very observable, that if it be moved about it at a distance, it doth observ the Poles and *Æquater* of the Orb of the Emanant, and not the Inherent Virtue therof, in the Magnet it self, though the Emanant Virtue be not Cnrporeal (nor indeed the Inherent) as the Magnetike Body is: which I have already proved in discoursing of Emanant Light, and may appear more manifestly by Magnetike Emanations, which penetrate not only Imporous Glass, but any other Bodys whatsoever. Now wheras it is a general Magnetike Rule, that the Correspondent Pole of one Magnet to another is of a contrary Denomination, as of North to South, and South to North, the Magnets are accordingly found to Conform themselvs, and the less Magnet will turn about itself so to apply its Correspondent Pole unto the other: which is no Flight of each others Poles, as some have supposed, but a Concordance, and Conformity according to the Magnetike Law of their Nature: and it doth so, not only by Contact of the greater Magnet, but at any distance within the Emanant Orb therof; becaus as the Inherent and Emanant Virtue of the same Magnet make one Intire Orb of the Magnetical

Virtue

Virtue therof, though of several and unequal Powers; so also doth the less Magnet endeavour thus to Conform itself within the Orb of the greater Magnet. And it may be tried, whether, as two several Lights in the same place do Colluminate, so these two Magnetike Virtues being so placed together do Cooperate by their Emanant Virtues. Also if one and the same Magnet be divided into several Magnets, the Individual Polarity of the Whole will be doubled; and accordingly as they are made by the Dissection two less Wholes, so they will also have two Individualy less Magnetike Virtues; and according to the Dissection so will the Polarity of each of them be: for if the Magnet be dissected by a Line cutting the *Axis* and Parallel to the *Æquator*, then the Poles, Center, *Axis* and *Æquator*, are only doubled; that is, the former Northern Pole in the one, and Southern Pole in the other, still remain, and where the Dissection is, there is a new Southern Pole opposite to the former Northern Pole, and a new Northern Pole opposite to the former Southern Pole, and the *Axis* is divided into two, and the former Center and *Æquator* are also changed into two new Centers and *Æquators* conformable to the Position of these double Poles: but if the Magnet be dissected by a Line cutting the *Æquator* and Parallel to the *Axis*, then the Continuity remaining untill the Dissection be finished, (which doth end toward one of the Poles) it is as if Wax were so divided by a Dissection almost throughout, but did stick together only at one end; and then the two branches therof produced and erected one above another, and after the upper part wholy severed from the neather, whereby that last Dissection doth not cutt the *Æquator*, as the first did, but the *Axis*, by a Line Parallel to the *Æquator*, as in the former Instance: and if we could suppose the Magnet to be so produced and erected Corporealy, and then wholy severed, there would be one Pole at the end of the greater part of the Magnet, which we will suppose to continue in the same Position as it was before; and the other part, which is first divided, and then supposed to be so produced and erected above it, must necessarily have another Pole opposite therunto, and consequently to that which itself had before when it was conjoined to the other; and so when it is wholy severed, that part seems to acquire two new Poles of contrary Denominations to the other, though indeed

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the reason therof be only the same, as of the former Experiment; and they are all only Correspondences, according to the Magnetike Law; whereby, as I said, North doth Correspond to South, and South to North: and so every Point of the *Axis* between the North Pole and the Center is Southern in respect of it, though it be within the Northern Hemisphere of the whole Magnet; as *England* is Southern in respect of the North Pole, or *Greenland*, though Northern in respect of the *Æquator*, or *Æthiopia*, and so likewise every Point between the South Pole and Center is Southern; and thus if the Magnet be divided by a Line cutting the *Axis* in any Point, the Correspondence of the Poles still remains, and if it cut the *Æquator*, yet in effect it is the same at last, as I have shewed by the Instance of Wax so dissected, and then produced and erected, and afterward severed: and though this be not so effected Corporealy in the dissection of a Magnet, yet the Spiritual Virtue therof being dissected at one end, and continued at the other, doth so produce itself, and run through the whole Body, that the part dissected will Correspond Magneticaly with that part from which it is last severed, whether, according to the Dissection, it be requisite that it be of the same, or of a contrary Denomination. And heerby we may plainly perceiv the Real Individuality of any Elementary *Compositum*, while it is Continuous in itself and Discontinued from others, and the Individual Oeconomy therof in itself; for so the Magnet, while it is one, hath but one Center, *Axis*, Poles, and *Æquator*; and assoon as it is Discontinued, the two Parts have each of them all the same *Apparatus* which is doubled, and so even Elementary Spirits have their Oeconomy, and are Conforted by Majoration and Consociation, as I have shewed. And these two Elements, Æther, and Earth, have not only their Inherent Qualitys, but also Emanant; becaus they are most remote, and therefore their Emanations are their Emissarys, whereby to operate at distance; wheras Water, and Air, have their *Effluvia:* but I know not whether they also have any such Emanant Qualitys (which deservs farther Inquisition) for Water, and Air may otherwise Operate at distance; that is, Water by Vapors, and Air by its own Body, which enters into any Pores of other Bodys, or may be Introsucted through them by their Cession, if they be Fluid, as Bubbles are through Water. These two Emanant

nant Qualitys of Æther, and Earth, are Analogous in some respects: for both Subsist in their Inherent Qualitys, and Bodys, and from them pass Localy into other Bodys; and perhaps they may both Cooperate within the same Orb, though only Localy United, and not Spiritualy Mist together; but the Polarity of the less Magnet is not varied presently by being placed within the Orb of a greater, or by the Earth itself, nor can Cooperate, if it do not Conform unto the greater Magnet, at the *Æquator*, or either of the Poles therof, as the Needle to the round *Terrella*, but ly in another Position, East and West, or the like; for then I rather suppose that they hinder one another, and attract severaly, more or less, according to their several Virtues, untill the greater Magnet can alter the Inherent Polarity of the less; and consequently the Emanation therof. Also they differ in many other things, as in that which I have mentioned, that the Emanant Orb of a round Magnets Body is not of equal Circumferential Power, like the Luminous Orb of a Starr, or other such Orbicular Lucid Body; which plainly proves Magnetical Virtue and Planetary to be very different; and that Magnetical Virtue having no Contrary, like Light, or Heat, is not Refracted, or Reflected; and so the *Radii* therof cannot be conspissated and Intended, as the Sunbeams by a Burning glass. And though they do both attract, yet their Attraction is also very different: for Magnets do only attract such other Bodys that are either Actualy or Potentialy Magnetical, and wherof the Potentiality is first Actuated by them: so that it is indeed rather a Concourse or mutual Embrace of both, then Attraction of one by the other, like the Attraction of Heat; and Heat may attract cold Bodys as well as hott; for though Cold be contrary to Heat, yet it is not contrary to the Attractive Virtue therof, which doth attract a cold Body, as it is a Body generaly, whether hott or cold; and is hindred only by the Gravity therof, which is also some *Remora* to Magnetike Attraction, though both that, and Heat, if they can once overcome the Gravity of the Body attracted, do attract with a very quick and smart Motion by their Emanant Rays; and the Magnet very notably, so that an Iron wheel, or Steel *Pendulum*, will either be wholy staid by a Magnet, and suspended like the Inclinatory Needle; or otherwise Move as freely, as if it were out of the Orb therof by its own Gravity: for though Motion of Matter is *per Gradum*, yet Spiritual Moti-

ons are *per Saltum*; and so are Motions by Elastical *Potentia*, as a Bullet Sucked up in the Barrell of a Musket by a mans breath staieth so long as the Gravity therof can resist the Elasticity of the Air Expanded by the Exuction, and then being overcome, leaps up very suddenly and violently; and, as I suppose, equaly, like the Planetary Motion of the Æther. The Attraction of Heat is either by the Inherent Quality therof, which though our new Philosophers deride, yet it is most evident, not only by the Attractive Power of the Vital Heat in Sensitive Bodys Internaly, but also Externaly of the Heat of Wooll, raw Silk, hott Spices, *Tobacco*, and many Medicaments, which do notably draw; and it may be also very strong, yea stronger then the draught of Horse, or Ox, as all workmen in Furnaces and Saltworks can attest. And this Attraction of Inherent Heat may be not only Immediately by Contact, but also Mediately by the Emanation therof, as in the former Instances: but if the Inherent Heat be not constant, and Fixed, as if it be excited by a litle rubbing, or otherwise, so as it is ready to return again suddenly into its Potentiality, then it attracteth not constantly, but suddenly in a special maner, which is called Electricity, and appears by such rubbing of *Electrum* or Amber, Jett, hard Wax, and some Stones: and is somwhat like to Elasticity, but from another reason; for that is only by violent Expansion of a Body, which the Spirit therof again reducing to its former Density, doth thereby draw other Bodys after it to avoid Vacuity, as I have said: wheras Electricity is by the sudden Generation of Heat, which accordingly emitteth its Emanant Rays, and then this sudden Calefaction as suddenly ceasing, and the Inherent Heat returning into its Potentiality, the Emanant Rays, which do Subsist in it, must also return into it, and in their Retreat or Resilience, which, as I have shewed, is very sudden and momentaneous, bring back with them small Bodys within the Orb therof, whose Gravity doth not hinder and prevail against the Spiritual *Potentia* therof: wheras a more Constant and Fixed Heat, though it may otherwise draw more strongly and durably, yet doth not attract so Electricaly; as may appear by hard Wax melted, which will not attract so Electricaly, as if it be only rubbed, and not melted: nor doth the Heat of Flame attract Electricaly, though it be very sudden and momentaneous; becaus it as suddenly passeth away in the Fume

and

and Body therof; but yet the Succeſſive Fire therof in the Candle or Wood doth attract, like Inherent Heat; And heerby it plainly appears that Emanant Rays do Subſiſt in, and flow from the Inherent Quality in the Subſtance, becauſ they do thus return to it again; and that even Emanant Accidents, though they flow forth out of their Subſtances, yet do not Migrate into others, becauſ they do thus return to them again. And now upon this occaſion, and more fully to explain this very ſtrange Electrical Motion, as I have before diſcourſed of the Motion of Matter to Union, or Station, Recumbence, or Succumbence, (which though Local Motions, are only ſuch as leaning to, or falling on, without any Active Power or Strength) ſo I ſhall now diſcourſ of the Motions of Spirits, which are properly Active and Vigorous, and truly Spiritual: and ſuch are the Motions of Elementary Spirits, which are the very loweſt *Claſſis* of all Subſtantial Activitys. Thus Heat and Moiſture Rarefy their own Bodys of Matter, as may appear in Fuſion; and Cold and Drines Condenſate them again, when they return to their Conſiſtence: and in all theſe Variations of the Denſity or Rarity of their Bodys, there is a Local Motion of the Matter itſelf Intrinſecaly in the Body therof, otherwiſe there ſhould be no ſuch Rarefaction and Condenſation; and the Motion of the Matter therin is only Paſſive, but the Motive *Potentia* of the Spirit, which by its Qualitys doth ſo Intrinſecaly Diſtend and Contract its own Body, is properly Active, as well as when it doth Extrinſecaly Expand or Compreſs another Body; which it may do conſequentialy by Rarefying or Condenſating its own Body: for ſo Fire by Rarefying the Powder into Flame and Fume doth explode a Bullet; and though when it Denſefieth its own Body the next commonly ſucceeds by Motion of the Matter to prevent Vacuity, yet this notable Inſtance of Electricity and all other Attractions by Heat ſhew alſo how it may attract another Body, not only by Concurſion, as two Magnets mutualy meet one another, but by plain drawing without any Corporeal Inſtruments, and Immediately by its own Spiritual Power, which Spirits have in themſelvs, as plainly appears by the Motive Power of Angels, who are purely Immaterial, and yet moſt ſwiftly Move themſelvs; and moſt ſtrongly other Bodys; as our Saviors Body was ſo carried up to the Pinnacle of the Temple: and yet according to that

Universal Oeconomy of Nature and Combination of all the Scale therof, as Angels cannot Move so soon through a greater Space as a less, so I suppose also that they cannot Move so easily through a more Dens Body as a more Rare (as I have also observed of the Magnetike Virtue) nor Move a more Heavy Body as easily as a more Light: and though they are the most Excellent and Potent Spirits, and so among other Titles called *Powers*, yet their Motive Power plainly declares how a Spirit may Immediately Move a Body of Matter, and that Materialists strangely err, who suppose that Matter can only be Moved by Matter, or Bodys by Bodys: for indeed Spirits, which are Substantial Activitys, are made purposely to Act and Move the Matter: and so all other Inferior Spirits, though less Potent, may Move it less Powerfully, according to their several Natures and Orders; that is, Material Spirits Move it more Materialy, and one by another; as Sensitive by the mediation of Vegetative, and Vegetative by the mediation of Elementary, according to the Scale of Nature, as I shall shew heerafter; but Elementary, which immediately Consubstantiate the Matter, may Immediately Move it, as I have before shewed, both Intrinsecaly, and Extrinsecaly, with very forcible and violent Motions: as in Thunder, Shooting in a Gun, and Rarefaction of Water into Vapors; whereby very great Execution may be done, yea, as great as by firing of Gunpowder, which indeed is only Rarefaction by Incension; and yet without Incension, if the Rarefaction be as much and as sudden, it hath the same Effect, becaus there is one and the same Caus of both; that is, the Rarefaction itself, whether it be one way, or other: and yet it is very consyderable, wherefore since the Vaporous Body is also capable of Compression as well as Rarefaction, the Bullet in the Gun should not again Compress the Flame into its former Extension, rather then be itself exploded by the Rarefaction, or, if it cannot be clearly expelled, why the very Gun itself should rather be broken; since Air is strangely Compreft in a Windgun by less Strength: but I conceiv the reason therof to be both the greatness of the Dilatation, which certeinly is more proportionably then the Compression; for the Air is never Compreft so much in the Windgun as to break it, and also the suddennes, whereby the force therof coming all at once (like the delivery of weighty Stones, Arrows, or the like out of Catapults, and Balists)

Baliſts) doth all together prevail over the reſiſtance, which in longer time and by degrees might prevail againſt it: and thus if the Rarefaction of Vapor be very great and very ſudden, the Execution will be very forcible and quick, and if leſs, leſs proportionably: nor can I conceiv any other cauſ of thoſe vaſt Eruptions, and Ejaculations of whole Torrents of ſuch maſſy Matter from Mount *Ætna* to ſo great a diſtance, but only the great, ſudden, and continual Rarefaction of Vapors happening in ſome fitt Caverns therof. Alſo the Planetary Motions of thoſe vaſt Orbs in ſuch rapid and perpetual courſes is very wonderful: which yet are only Elementary. Thus Magnetical, Electrical, and Planetary Motions are indeed by ſuch Natural Magike as I have deſcribed; and though I alſo acknowledg that Emanations may be at the greateſt diſtances, and *Effluvia* may paſs very farr, yet I cannot conceiv how any Sympathetical Operations can Naturaly have an equal Effect at the fartheſt diſtance as at the neereſt, ſince no Emanations, *Effluvia*, nor Angels themſelvs, do, or can ſo Operate. Now *Effluvia*, as I have ſaid, are of Inherent Qualitys, as odorous, or others, in and with their Vaporous Bodys, and not like Emanations, which are only of Emanant Qualitys, and which, though weaker then Inherent, yet are more Spiritual and Separate from the Matter; and may be eaſily diſtinguiſhed from the others; for they penetrate the very Bodys, wheras *Effluvia* only pierce and enter into the Pores therof; alſo Emanant Qualitys are never Exhauſted, but always (while they are in Act and not obſtructed) fill their whole Sphere; nor do they weigh, or by their Emanation make their Subſtantial Bodys to be Lighter; wheras *Effluvia*, though they may be very Rare and Subtile, yet do proportionably diminiſh their Bodys, and accordingly make them to weigh ſomwhat leſs, unleſs they be alſo continualy renewed. There is alſo a great Coheſion and Continuation of Homogeneous Bodys, which I have formerly obſerved, though few of them do ſo attract or concurr as Magnets. It is ſaid, that Gold doth attract the Fume of Mercury, and workmen uſe to hold a piece of Gold in their mouths to receiv it, which will be notably ſilver'd thereby; but that may be only by ſo much of the Fume as doth happen to fall upon the Gold, as Dew upon leavs of Trees or Herbs; yet certeinly when the Mercury doth ſo fall upon the Gold, it doth notably retein it, being, as I ſuppoſe, very Homogeneous

with it, and that there is much Mercury in the Compoſition of Gold, and ſo fixed in it, as that no Fume therof will again be emitted by any Operation of the moſt Intenſ Fire, though never ſo long continued: but there is alſo ſome other predominant Principle in the Compoſition therof, which apparently renders it heavier then Mercury; though probably Mercury be one Principle in the Compoſition of all Metalls (except perhaps of Iron which is Magnetical, and will not be Corroded by it.) There is alſo a Fume emitted in melting Lead ſomwhat like that of Mercury, very hurtfull to workmen, and which doth ſtrangely allure Cats, as a ſweet Poiſon, and thereby kill them. But I ſhall not proceed to diſcourſ of Metalls, and Minerals, and the like, which I conceiv to be *Compoſita*, and the Spirits therof no Simple Subſtances, Created in the Begining, but that they are Miſt of ſuch ſeveral Simple and Created Principles; and therefore not mentioned in all the Six Days works, though they and all other perfect *Miſta* were then alſo Improperly Created; and ſo we read of Gold, *Bdellium*, and *Onyx*: but this general Syſtem mentioneth only ſuch grand *Miſta*, as Elements, and Planets, which in the Whole are Ingenerable, and Incorruptible, and therefore are particularly mentioned, as they were ſo ſpecialy Created.

IX. The Earth, being ſuch as I have deſcribed, doth plainly declare itſelf to be Immovable, that is, not apt to Move itſelf, (if poſſible to be Moved by any others) Yet there are ſome, who not by any Natural Power, nor by Faith, but Fanſy, can remove, not only Mountains, but the whole Earth; not by heaping and raiſing it up to Heaven, as the Poets report of the Giants; but, as if they had obtained the Victory for it, can place it among thoſe Idol Gods, *Saturn*, *Jupiter*, *Mars*, and others; which I ſhall now diſprove, having already ſhewed how the Earth is one whole Element in itſelf Naturaly, and only Localy United with Water in the ſurface therof, and ſo made one Terraqueous Globe in this Third Day; but not with the Aery *Expanſum*, which was made in the Second Day; and how in the Firſt Day the Æther was made to Move about the Earth with the Light therin, Diurnaly, which made Day and Night; and that the Earth was not made to Move about it, but remained in its *Chaos*, untill this Third Day. Wherunto I ſhall add one Text more as a Comment upon

upon the other, being part of that Divine Hymn of Creation, *Who laid the Foundations of the Earth* (or founded the Earth upon its *Basis*) *that it cannot be Moved.* And so where it is said, *The World also is stablished that it cannot be Moved*, it is to be understood of this *Orbis Terræ* particularly, as I have shewed; or if any may conceiv otherwise, then it shews that the Circumferential Superæther, as well as the Centrical Earth, is Immovable; like the Roof, and Foundation, of an Houf, which are both Immovable; though other Bodys Move and are Moved therin between them: and though the Roof also may be supposed to be Mobile (as some very great *Amphitheaters* have been turned about) yet the Foundation must be Immobile; otherwise it should not be such a Foundation: and so it is expressly said, that the Earth is so founded upon her *Bases*, that it may not be Moved. Now as the Earth hath no Heat, Planetary Virtue, or the like Active, and Motive Qualitys, which might Move it, as Æther; so it hath such as serv to found and fix it, which are therefore called the *Bases* therof, and *Pillars of the Earth*; whence it is also by others rightly termed *Bruta tellus.* Thus, as I have shewed, it is the most Dens of all Bodys, and consequently most Grave; and therefore possesseth the Center of the World, to which it is united, as to another thing, by its own Gravity; wherefore as the Universal Center is Immobile, otherwise it should not be such a Center, so the Gravity of the Earth doth Indissolubly unite it thereunto, unless there can be assigned any other Body in Nature more Grave then it, which might extrude it. Again, as by its own Gravity it is thus united to the Center, so by its own Consistence it doth unite all its Parts together, whereby they will not, nor cannot, Move in the Whole, as Motes in Water: and though it should be supposed to have more Consistent Parts one way then another, yet becaus they are all Consistent, they do not flow every way to fill the Sphere, but all weigh Perpendicularly downward upon the same Center, without any Fluctuation, Trepidation, or Inclination any other way. And to keep it from being Moved in the Whole about the Center any way, it hath Magnetical Virtue to fix it in one determinate Polar Position, North and South; so that it can neither be Moved out of its Place, nor in its Place, but is wholy Immobile. And becaus this Magnetical Virtue of the Earth is the only colorable Caus offered

to

to prove it Motive, (and so the Planets are also said to be Magnets, and both confounded together, which are most different in Nature) I shall now more largely disprove that Assertion, and thereby plainly prove the Earth not to Move. I have granted the Earth to be Magnetical, and I do also grant the Æther to be Planetary; and shall observ a wonderfull Analogy between them; that is, that the Poles of the Earth do so Correspond with the Poles of the Æther, that if the Magnetical *Axis* of the Earth were produced, it would Intersect the Poles of the Æther, so as it should seem to Move round upon, and about them; for so the Poles of the Earth are North and South, and the Motion of the Æther East and West; but though both Earth and Æther have their *Axis*, Poles, *Æquator*, and Meridian, and the rest, not only Mathematicaly, but Physicaly, as I shall shew heerafter, yet they are not Univocal, as some suppose, becaus they have the same Names, but Equivocal in Nature, and Physicaly different; for the Earth hath them all for Fixation and Rest, and the Æther to direct the Motion therof, as I shall now shew. I suppose, we all agree, that the Verticity of a Magnet is a Motion from Pole to Pole, that is, from North to South, or from South to North, Meridionaly according to the Magnetike *Axis* therof, and not from East to West, or from West to East, about the *Axis*, and according to the *Æquator* therof; and also, that if the Earth did Move Diurnaly, it must Move from East to West, or West to East, becaus it is so Illuminated. Now I say, that no Magnet doth, or can so Move, but only from North to South, or from South to North, as may be tried by any Magnet, or *Terrella*, which hath Verticity: Wherefore they greatly err who affirm any such Motion of the Earth, or of any Magnet about its *Axis*; for indeed, if it should so Move about its *Axis*, according to the *Æquator*, it could not also Move from Pole to Pole, according to the Meridian, as I shall also shew heerafter. Nor did the Antients so expres the Earth to Move about its *Axis*, but *Circa Medium*, or about its Center; which yet, as I have shewed, it cannot do Diurnaly, becaus that Motion is according to the *Æquator*. Again, Verticity which is the only Motion of one and the same Magnet by itself is not Circular, but only from Pole to Pole Semicircularly; and Concursion of one Magnet to another is not Circular, but Directly Progressive; and therefore it may not be Imagined, that the

the Earth, or Planets, do so Magneticaly Move one about another, as I shall shew heerafter. And though the Verticity of the Earth be Potentialy in it, yet it never is, nor shall be Actual; for unless it could be Moved from its Polar Position, there is no need nor use therof: and such Potentialitys, though they be never reduced into Act, are not vain, becaus they are Hypothetical, and first suppose a violence, which Nature abhorreth: and so Superæther, as it is Matter, hath Motion as well as all other Bodys Potentialy, but never Actualy: and so the whole Earth hath also Gravity, and the like. And as I have now disproved this pretended Motion of the Earth, by the Magnetical virtue therof, so I know no other Cause assigned of such a rapid Motion therof as must be supposed, that is, about fifteen Miles every Minute Diurnaly, and almost fifty Annualy; and the Distance between our Accesses, and Recesses to, or from the fixed Starrs, should be about eight Millions of Miles (which is a large stride) and yet we perceiv no difference therof, as we do of *Mars*, who is placed in the fifth Sphere. Nor is there any difference of a Bullet shott from a Gun East, or West, as there should be very consyderably according to this common Calculation, and so of a Bullet drop'd from a a Steeple: but they say, the Bullet also is a *Terrella*, and Moves with the Motion of the Earth; and would prove it by the fallacious Experiment of an Arrow shot upright from a Ship sailing, and falling down again in the same place: but then if the Steeple also were removed, as much as the Ship saileth, the Bullet dropped from it should follow it, which certeinly is not according to the Motion of the Earth, or *Terrella*: and therefore to defend this they have invented another worse Absurdity: That there is, I know not what, Magical Line of Motion still continuing and interceding between the Mover and Moved, after the Impression past, and Contact discontinued: but neither doth the Arrow flying spin any such Corporeal Thread or Line, like a Spider; nor the Archer shooting emitt any such Spiritual *Radius*, like Emanant Heat, which may so direct the Motion. Certeinly a Parthian, who shoots flying, or a Ship sailing, do not draw back the Arrow or Bullet after them; nor will Stones so fall into the hand of a Boy playing at Checkstone, without any answerable Motion therof, whereby to catch them. Neither is there any such

Magnetical Stake reaching from the Subcortical Earth, through the *Cortex*, Water, and Air, and, as some say, to the Moon; for Magnetical Virtue hath no such long or strong Orb, like Light, or Heat; as no particular Magnet, or *Terrella*, doth Eradiate like a Candle, or Spark of Fire. Or if it should, yet it could not Move Magneticaly any other Body, that is not Magnetical, or indeed that is not Consistent; as a Stake in a Pond cannot direct the Motion of the Water in it, or Air above it; becaus they are Fluid and not Consistent. Certeinly Birds in the Air, though more Consistent, are not Magnetical; and though a Bullet of Iron be Consistent, and Magnetical, Potentialy, yet if it be not so Actualy, the former Experiments will be the same, as if it were; and if it have the Magnetical Virtue therof Actualy excited in itself, then it is a *Terrella* in itself, and consequently, if the Earth, which is the great Magnet, Move round, so should every such *Terrella*, which it doth not, as may be tried by any such round Bullet, or Magnet, placed upon its *Axis* in the most exact *Æquilibrium*: wheras every part of Water, severed from the Element therof, is Water, having all the Propertys therof; and so should every such Magnet be a *Terrella*, as indeed they call it, having all the Magnetical Propertys therof: and some Magnetical Doctors do therefore affirm, very falsly, that a *Terrella* so placed will Move round like the Earth; who thereby, very truly, acknowledg this Consequence; that if the Earth so Move, the *Terrella* must also so Move; wherefore since the *Terrella* doth not so Move, neither doth the Earth so Move: and though a Bullet flying when it is shot from a Gun, by that Violent Motion, doth also Move round, as I have formerly shewed from another reason; yet that may be any other way as well as the same way with the supposed Motion of the Earth; and the Bullet drop'd from a Steeple, and so falling downward, by a Natural Motion, doth not, as I suppose, Move round, or not the same way with the supposed Motion of the Earth. Thus every less Magnet, not being one and the same with the Earth, but Individualy such in itself, and having its own Poles, *Axis*, Center, and *Æquator*, as well as the Earth, (as may appear if it be laid East and West, in which Position it will a long time retein its own Polarity, not only different, but adverse to the Polarity of the Earth, which

which is North and South) by its own Immobility doth also Sensibly prove the Immobility of the Earth. And yet we must believ all the Motions therof, which some Philosophers very confidently Suppose, and vehemently Impose upon us, maugre all our own Faith, Reason, and Sens; becaus they tell us Scripture is Popular, Reason Ancipitous, and Sens Fallacious; and so all other men must be governed only by the Magistery of their Fansys, which, whatsoever it may be to themselvs, is certeinly no more to others then they can prove by Scripture, Reason, and Sens; in which there is no Fallacy, but only in our Apprehensions, which are indeed our Infirmitys, and ought to be rectified and corrected by other right Ratiocinations and Sensations, and not by other Imaginations. Thus wheras I have granted that supposing the Earth to Move constantly and equaly, though never so swiftly, if we were also carried on it, we should not feel it to Move; becaus we our selvs do not Move, and yet I say, that our Bodys, being also in the Air, should feel themselvs Moved against the Air, though never so calm, but especialy when the Wind bloweth the other way against the pretended Motion of the Earth, which certeinly could not be Insensible; but, as I rather suppose, Intolerable; if their Imagination did not also Summove the Air for us, by supposing both Water and Air to be parts of the great Magnet, the Earth; which is as contrary to all Sens as the other: this Insensibility or Deception of Sens ought to be rectified by other right Sensations, and not by such other Imaginations and Insensibilitys. Again, according to the very Analogy of Deception, as the Sens senseth falsly in one case, so it doth likewise in all like cases, becaus there is the same reason therof: And now also I will examin the supposed Motion of the Earth according to this Analogy of that Deception, which they so strongly urge for it, and I shall only change that Vers (which is their usual Tex) accordingly

Provehimur Terra, Cœlum Stellaq; recedunt:

and so as a Man in a Ship sailing by the Shore seems to see the Earth and Towns to Move, which do not, and doth not feel himself to be Moved, as indeed he is, if he were so Moved by the Motion of the Earth, which must be two hundred times more swiftly then any Ship doth sail, he should seem to see the Moon and Planets to Move Visibly, which he doth not: and though

againſt this is objected the greater diſtance of the Moon and Starrs; yet that is recompenſed by their greater Magnitude, which renders them Viſible proportionably according to the diſtance; and by the farr greater and ſwifter Motion: and ſo let the Man in the Ship ſailing with full Sail, though againſt the pretended Motion of the Earth, behold the Moon and Starrs Tranſverſly, and obſerv whether they do not ſeem to Move, otherwiſe then when he ſtandeth on the Earth, or when the Ship, wherin he is, doth not ſail. There is one who ſaith that both the Earth and alſo the Æther do Move; becauſ, as he ſuppoſeth, while one Moveth from the other, the other alſo Moveth from it; and ſo that it is all one and the ſame, whether we affirm the Earth or Æther to Move; whereby he can ſolv this very *Phænomenon* of their Motion either way, which I have already refuted; and I know none beſides himſelf that did ever maintein it; but generaly others affirm the Earth to Move, and Æther not to Move; becauſ they ſuppoſe all the conſequent *Phænomena* may be ſolved either way: who if they can find out any Error, which they think is Tenible, though it be not Truth, they affect and embrace it rather then Truth, and can pleaſ themſelvs in amuſing the World therewith, which is a very Falſarious and Diſingenuous Humor, and more proper to Juglers and Impoſtors then Philoſophers. And becauſ I ſcarcely know any Opinion wherin they more exerciſe this Art, then this of the Motion of the Earth, as I have already diſproved it, ſo I ſhall alſo heerafter prove the Motion of the Æther and Sun, and therin ſhew how all the *Phænomena* can only be ſolved thereby; and ſhall now proceed to refute that other grand Error, which is indeed more Fundamental and Univerſal, that is, their Doctrine of Matter and Motion. Wherefore having diſcourſed of the Terraqueous Globe, I ſhall review it, and conſyder whether only Matter and Motion could produce the Spirits and Spiritual Qualitys therof; certeinly not Moiſture, which is the ſame whether the Water be Stagnant, or Fluent; nor Drines which is generaly Conſiſtent, and ſo of the reſt (which to proſecute particularly were ſupervacaneous) but I will now only alter the Scene, and tranſfer it from Air and Æther to Water; and ſuppoſe it to be Tepid, that is, partly Hott, and partly Cold, and alſo Luminous, as it is Diaphanous, and we will admitt it Sonorous and Saporous, and if you pleaſ, Odorous; beſides Moiſture, and the other

other Simple Qualitys therof; all which may be in the ſame Inſtant *per omnia Puncta* of the Water: and if all theſe which are ſo Specificaly different in their own Nature, could be only ſo many ſeveral Motions of the ſame Matter, and we might Microſcopicaly behold them, we ſhould ſee a moſt ſtrange Mooriſh dance, not only of every dancing Corpuſcle, but, even in every Joint and Point therof, ſo many ſeveral different and adverſ ways as muſt be aſſigned to make all their ſeveral Natures Specifical, and Individual, Simple, and Compound, which is indeed Impoſſible, and ſo ridiculous, as needeth no farther refutation. Again, once more we will alter the Scene from Water to Earth; which becauſ I have affirmed to be Immovable in the whole Body of the Matter therof, and alſo the Spirits and Spiritual Qualitys therof to be leaſt Active, I will likewiſe inquire into one thing more, which I doubt our new Philoſophers had forgott, and that is, whether as Motion in others, ſo alſo Reſt in the Matter of Earth may not produce the Spirit and Spiritual Qualitys therof, as Drines, and others? which though they be indeed leſs Active then others, yet they are Active and Motive in themſelvs: and ſo Conſiſtence though it be moſt like the Reſt of Matter, yet hath a Strength and Center therof, very different from that of the Matter, which alſo of itſelf is Fluid, as I have ſhewed: and Magnetike Virtue, though it affect Polar Reſt, yet hath alſo an Intrinſecal Motion of Verticity in itſelf to reſtore it unto it. Nor can all the Terreous Qualitys be only leſs Active Motions of the Matter, becauſ they are all in the ſame Inſtant *per omnia Puncta* in the ſame Matter, and cannot be ſo made ſeveraly by one and the ſame Motion of the Matter, nor can there be ſo many ſeveral Motions therof together, whether more or leſs Active; wheras all the Terreous Qualitys may be Actualy together in the ſame Matter, as I have before ſufficiently declared of all the other Elements, and their Spirits and Spiritual Qualitys; and I now ſhall conclude, that even Elementary Spirits and Qualitys are ſomwhat more, and other, then either Mater and Motion, or Matter and Reſt.

X. As Matter is Subordinate to the Elementary Spirits, which do Immediately Conſubſtantiate it, ſo are they with the Matter to Vegetative Spirits, as I have ſhewed in the Scale of Nature:

and so Vegetatives were not produced untill the Elements were all Perfected, becaus Vegetatives require an Elementary Mistion of them all, and indeed, a proper Mistion therof, which every Spirit ordereth and governeth, both as Subordinate and Subservient to itself; but they are not governed by the special Influence of any Planet or Starr, as the Rabbins say, there is not a Starr in Heaven which doth not point to an Herb on Earth, and bid it grow; for as the Globe of Light in the First Day sufficed to make Day and Night, so also the Heat therof was sufficient for Vegetation; as may plainly appear, in that Vegetatives were produced before the Sun, Moon, or Starrs, (and so also Metalls, though others ascribe the Production therof to Planets) which yet are more particularly Inservient and Beneficial to them; as they do also more particularly vary Days and Nights, and all the Seasons of the Year. But Vegetatives were, and still are produced out of the Earth, or Terraqueous Globe, as it is moistned with Water; for the Earth is the Region both of Vegetatives, and Sensitives, and also of Man: and so it is said, *The Earth brought forth Grass*, &c. and it is observed that the first *Produxit* is of Vegetatives; for the Elements which Immediately Consubstantiate the Matter were not produced, but so Created in, and with it, in the Begining, whereby they were then Denominated Heavens and Earth, and so are Inseparably united unto it, though they were afterward Perfected in their Mistions, and production of their Qualitys thereby, as I have shewed; and so there is no *Produxit* of Planets, becaus they also are Elementary: wheras, though Vegetative Spirits were Created in the Begining, as it is said, *God made every Plant of the field before it was in the Earth, and every Herb before it grew*; yet they were only Latent in their Elements, and not produced, before the Elements were Perfected in their Mistions and Qualitys; which was previous and requisite to their production, as they also were to the production of Sensitives, as I shall shew heerafter: and though Vegetatives are of a farr higher and more excellent nature then Elements, yet they were Created in this same Third Day, wherin Earth and Water were Perfected, and were pregnant and parturient of them, and they ready to be produced, to shew the Continuation of the Work of Creation by God, who never Rested untill the last Instant of the Sixth Day, as I shall shew heerafter, and also the Combination of the Superior

perior Natures with the Inferior; as Man alſo was Created in the ſame laſt Day with Beaſts: yet neither could the Elements ſo Perfected, (and much leſs Matter) ſo produce them, nor they produce themſelvs, as the Earth now brings them forth, and they Generate others, untill God ſaid, *Let the Earth bring forth Graſs*, &c. or as it is Originaly, *Germinet germen*; which imports another way of ſpecial production, then the Miſtion of Elements, that is, by Germination or growing out of the Earth, ſo as no Elementary *Miſta* are brought forth; and therefore plainly Stones, Metalls, Minerals, and the like, do not Vegetate; for they are neither Graſs, Herbs, nor Trees, nor of any ſuch Kind, but only Elementary *Compoſita*, and Claſſicaly Inferior to Vegetatives (and ſo alſo are the Planets and Starrs, as I ſhall ſhew heerafter) nor are they of any midle nature between Elementary and Vegetative, becauſ there are no ſuch *Participia* in the Scale of Nature; and though Elementary Spirits are ſo farr forth Plaſtical, as to ſuperinduce a requiſite Denſity or Rarity in their Bodys of Matter, and ſome Regular Figuration, as Orbicular, and ſometimes perhaps Angular; yet they do not Organiſe them, and make ſuch Members, and Joints, and the whole *Compages* therof, as the Bodys of Vegetatives certeinly; they have no Vegetative Nutrition, Augmentation, and Generation, though they may ſeem to Grow by Accretion, as Fire doth Generate Fire Univocaly in Bodys pregnant therwith; nor do they grow or ſprout of the Earth; or as it is ſaid, *upon the Earth*, as Germens; but abide in their Element. Alſo Vegetatives commonly grow out of them, as well as out of Earth, and not only Moſs, and Ivy, and the like, but great Trees are ſeen to grow out of Stones, Rooting into them, and as I ſuppoſe, cleaving them aſunder, if perhaps the Seeds did not firſt fall into ſuch cleſts; otherwiſe it is a Noble Inſtance of the Predominant *Potentia* of Vegetative Spirits over Elementary: for the Root of the Tree is a farr ſofter Body then the Stone, and therefore cannot cleav it by any Corporeal, but only by a Spiritual Power: wheras I have ſeen a Birch grow out of an Oak, and not cleav it; which, as I ſuppoſe, was produced firſt by a Seed falling into the Crown of the Oak, where was ſome Earth, wherin it firſt Rooted itſelf, and ſo grew to be another Individual and Intire Tree in itſelf; and not like a Branch Ingraffed into another Tree, having one and the

ſame

ſame common Root: and wheras all Vegetatives have Roots, certeinly no Metalls, or Starrs, or the like, have any; and Stones are only Poeticaly termed Vive, when they are in their proper Beds, but neither Live, nor Vegetate, any more then when they are out of them. And indeed though Vegetatives do Vegetate, yet they do not properly Live, as I ſhall ſhew heerafter, but all their Operations, though farr above Elementary, are as farr below Senſitive; and are as Subordinate to Senſitive Spirits, as Elementary are to them: but as Elementary are Miſt one with another, and Compoſited only with the Matter, ſo Vegetatives are Compoſited with them, and are the firſt kind of Spirits that are Compoſited with other Spirits; and therefore are firſt ſaid to be produced, as I have ſhewed. And as Elementary *Compoſita* are variouſly Miſt among themſelvs, and by their various Qualitys, (which are many more then only one Firſt with a Second Quality of another Element attending it, as ſome have very falſly ſuppoſed, in every one of them) and by all the Changes therof, in their Compoſitions, and Decompoſitions, as I have obſerved, whereby Glaſs, Stones, Metalls, Minerals, and ſuch like only Elementary things, are Generated; ſo, as I ſaid, there are Ligneous, and other Elementary *Miſta*, properly Subordinate unto Vegetatives, and moſt probably ſome proper Miſtion to every *Species* therof, as there is a proper Vegetative Spirit Subordinate to every Senſitive *Species*: for certeinly the proper Plaſtical Virtue of any Graſs, Herb, or Tree, which doth accordingly Organiſe and Effigiate it, cannot Organiſe and Effigiate another Specificaly different from it, and much leſs any Senſitive Body, which yet is ſo Organiſed and Effigiated by a Vegetative Spirit, as I ſhall ſhew heerafter: nor indeed can the proper Qualitys of one Spirit Subſiſt in another; which to affirm, as ſome do, is more abſurd then Migration of Accidents, as it is more to produce any thing Originaly out of itſelf, then being firſt produced by another to receiv and entertein it into itſelf: nor yet hath any Superior Spirit Eminently, as they ſay, in itſelf the proper Qualitys of any Inferior Spirit, becauſ they are proper to the other; which though Inferior, yet hath alſo its own proper excellencys, whereby it is known to be, and indeed is what it is; and ſo Vegetative Spirits only do Vegetate, as well as Senſitive only Senſ, and Intellective only underſtand. Thus though there are fower Elements, and no more, of which all the various

various Elementary *Mista* are made, yet Vegetative Spirits are Indefinite, and so it is Indefinitely said of them, that they were brought forth after their Kinds; and perhaps Vegetative Spirits are more various then any others, becaus they are also Subordinate to every Sensitive *Species*, wheras there is only one Sensitive Spirit so Subordinate to Intellective, that is, to the Spirit of Man. But though the *Species* of Vegetatives are not enumerated, yet there are three *Genera* therof mentioned, Grass, Herbs, and Trees, if the same Word *Germen* may also signify *Gramen*, and be not only a general Name of all Vegetatives, which then must be subdivided only into Herbs, and Trees, (as they only are mentioned afterward to be for food of Man) but as it is often rendred Grass, so I rather conceiv it in the largest sens: certeinly it is not only a Tender Blade, for they were all made Perfect and Mature; and wheras Herbs are said to have Seed, and Trees Fruit, if there is Grass also, which hath neither Fruit, nor Seed, I conceiv it ought so to be intended therof. Yet I do not suppose Mold, or the like, to be any perfect Vegetatives, Immediately Created by God, but rather Meteorical Vegetative *Composita*, and only Imperfect Rudiments of Vegetation; and so likewise the Excrescences of Vegetatives, as Jews Ear, Sponk, Agarike, and the like, which are somwhat like Wens in Sensitives; as there are such *Anomala* of any Material Spirits, which are Generable and Corruptible, though neither of Matter, nor Immaterial Spirits, which are Ingenerable and Incorruptible. And thus I suppose Vegetatives growing in Water, as Duckweed, and the like, to be Anomalous; for it is said of perfect Vegetatives in their Creation, Let the Earth bring them forth; and so they were said to be upon the Earth, and not upon the Water: and as all Grass hath a Root, so I conceiv any Vegetative which hath no Root, to be Anomalous. Also Moss, and Sponge, which is a kind of Seamoss, are Imperfect Grass; but that which we commonly call Grass, having a Root, Leaf, and Spire of Grass, is, as I suppose, the first perfect Vegetative. And I shall consyder first the Root, which is a Bulbous Substance, and hath generaly more of the Vegetative Virtue in it then the Blade of Grass, or *Calamus* of Herbs, or solid Trunk of a Tree, being also Esculent and Medicinal; and is in itself the Mouth of Vegetatives sett Downward in the Earth, wheras the Mouths of Sensitives are Upward, and not fixed to their

Element, but more discontinued, becaus Sensitive Spirits are not so united to the Matter as Vegetative, nor Vegetative as Elementary. Also though the Root be the Mouth, and partly as the Stomach of Vegetatives, yet the upper parts of Plants above the Earth do likewise perform the Concoction, as may appear by a Cion, which doth over-rule the Stock heerin; and the Concoction in the Root is for Nourishment of itself, and perhaps preparatory for the upper parts, as that of the Oak is for Ivy, or Mistleto; for properly Plants have no Stomach, or such a common Coquine, as Sensitives; though as they have a more special and proper Elementary Mistion which they order and govern for themselves, as I said, so consequently a Radical Heat, Moisture, and those other Qualitys, with a certein Proportion and *Acme* therof, to which they grow up, and then decay again, as well as Sensitives: but these seem not to be so Powerfull and Operative in themselvs, as the Vital Heat, and the like, in Sensitives, and are much assisted by external Heat, and the like, and therefore grow most in hotter and moister weather: and this Woodmen observ in their situation to the Sun and Winds, and notably in cutting Wood in the Spring, that as the Air is more hott, or cold, and the Wind changeth from South to North, the Sap will rise and fall again, as Water in a Weatherglass: but it riseth in hotter, and falleth in colder weather, and not contrarily, as it doth in the Weatherglass, becaus it is not ruled by any such Expansion, and Elastical *Potentia*, as I have shewed of the open Weatherglass, but only by Rarefaction of the Juyce itself, which plainly causeth it to ascend through the Pores or Cavitys of the Plant, like Vapor in the Air: nor are the inward parts of Vegetatives so Actualy hott, as of Sensitives, whose Concoction is generaly best performed, when the Ambient Air is more Cold, and not as of Vegetatives, when it is more hott. Yet the upper parts of Plants seem also to Attract by their Heat, though not so much as Sensitives. It is a Curiosity much affected to make Equivocal Plants and Fruits, which cannot be so well effected as in Sensitives, whose Seeds are Fluid, and more easily Mist; though I conceiv the most probable way to be by some Unition of their Seeds, and especialy such as are Homogeneous, or more Homoeogeneous, as Mules are commonly Generated by the Mistion of Equine and Asinine Seeds: also it

may

may be tried by Unition of their Roots, but then care muſt be had in ſlitting and dividing them; for Gardiners ſay there is a Centrical part of the Root, which if it be pricked through with a Pin, it will never grow; as there is an *Apex* or *Gemma* which Ants bite off in Seeds. The Leaf or Blade of Graſs, which is only an Ornament of other Plants, is the Body therof above ground, and is more Eſculent then Leavs of Trees; but both Blades and Leavs are generaly Green, which is a moſt equaly Miſt, and therefore moſt gratefull and inoffenſive Color, and ſo moſt fitt for their common Covering; and they plainly ſhew, how Green is Miſt of Blew and Yellow, for when the Blew, which is more Opacous, and Subſiſts in the ſtronger Juice, decays, together with it the Leavs turn Yellow, and fall. The next Rank is of Herbs, which beſides Leavs have a Stalk to exalt and ſupport them, interceding between the Root and the Leavs; and that is generaly an hollow *Calamus*, not ſo ſtrong and Ligneous as the Trunks of Trees, but more Stramineous, and firſt only a Blade of Graſs, and not any *Surculus*, and it is commonly ſtrengthned by Joints and Knotts, which alſo ſerv, as Valvs, to retein the Vaporous Sap aſcending in them; and beſides Leavs they have commonly Flowers, and are ſo denominated *Flores*. And of this kind the loweſt is ſuch Graſs as hath Seeds and a Flower, or Effloreſcence, as Corn, before it be perfect Seed; and the Seed is commonly in the Flower, which is a more delicate kind of Leaf, and compoſed of more refined and concocted Sap, having alſo generaly more Color or Odor, or both; but very rarely is Green, to diſtinguiſh it from common Leavs; and hardly ever Black of itſelf, though Leavs and Flowers are often made ſo by Aduſtion, as when Dews falling on them are aduſted by a Torrid heat, they turn Blackiſh, wheras ordinary Vegetation is by a more moderate *Tepor*: and yet there are Blackberrys, and ſuch like Fruits, which are firſt of ſome other Color, and by an high Concoction are made Blackiſh to the ſight; but their Juice doth hardly Denigrate, or Dy Black, like perfect Aduſtion; as Moſſy Wood charked will be throughly Black, both in the Wood, Bark, and Moſs: The Seed is of an higher nature then the Flower, not only more Eſculent and Medicinal generaly, but alſo conteining another Individual Spirit of the ſame *Species* in itſelf, whereby the

Plant doth Univocaly Generate after its Kind, as I have shewed. The Third sort is of all other perfect Vegetatives, which are neither of the others; and they are described to be Ligneous, as the Original word imports, that is, Arboreous; and though some of them, as Vines, Brambles, and the like, be less Ligneous, and need other Trees to support them, yet themselvs also are Trees, according to this general distribution of Plants, and we do not call them Herbs; as Terrene Reptiles are Beasts, and not Fishes. And all Trees grow up first from softer *Surculi*, which afrerward may become so firm, that they are not only Ligneous, but seem almost to be Saxeous, as *Lignum vitæ*, Ebony, Brasile wood, and the like Trees of a more strong and Terreous Juice. I have seen Oaken wood digged out of the Sea Beach (where formerly the Tree had grown, and was overthrown and overwhelmed by Inundations, after long lying in the Salt Juice therof) as hard and firm as the beforementioned. Corall also, which is a *Frutex* of the Rocks, is very hard, when it is out of the Water; and perhaps not so very tender under it as is commonly reported; though when the thick Juice therof is desiccated, it is most Lapideous. And I suppose some such cold and gross Juice is the cause of Petrification; not so much by Conglaciation, as by reduction of a fitt Juice in the Body therof to such a Consistence; and plainly Stones of Fruits are so denominated from their almost Saxeous hardnes. whereby they become such Caskets for Seeds, which are Natures Gemms; and yet we cannot conceiv their Induration to be any Conglaciation, but rather Desiccation; for Earth and Water are most Congenerous Elements, and as they are composed into one Terraqueous Globe, so they have a greater Intermistion: and as Metalls may become Fluid by Fusion, so may these *Succi* be Indurated and fixed by Drines and Consistence; though as Heat is assistant in the one, so may Cold be in the other. But Trunks of Trees, though not hollow as Stalks of Herbs, have their Porous passages through which the Sap doth ascend, and commonly by the most Spongy part therof, that is, the Pith, which is formed by the Bubbling and Spumeous Vapor ascending in it, and is fixed by degrees; as may be seen by Birds Quills, which have litle Bladders left in the Cavitys therof, though their Pith is more Constipated in the Feather. And there

there is obſerved to be ſome ſuch hollownes in Hairs; and both Feathers and Hairs are Vegetatives, though Subordinate parts of Senſitive Bodys; and yet they have neither Seed, nor Root properly, becauſ they are not properly Individuals in themſelvs, but parts of others; and ſo they are Analogous to Leavs and Flowers, and of as Beautifull and more ſtrong Colors, and many of them perfectly Black. Alſo the Sap doth not only aſcend through the Pith, but notably between the Wood and the Bark; and in the aſcent is Concocted into Wood every year, as may appear by the Circles therof very viſibly in more ſappy Trees, as Willow, Aſh, Birch, and the like, whereby, knowing the ſeveral years growth therof, you may compute the Gain or Loſs, according to the proportion of the Majority of the latter Circles, and Intereſt of the yearly Rents precedent: and the Sap may alſo riſe between theſe Circles, and through the very Pores of the Wood, as Bloud in Senſitive Bodys may Tranſudate through the Fleſh; for the Tree will ſprout, and ſhoot forth, every where; and hollow Trees without any Pith may bear Fruit: and indeed the Bark or Skin, which is outward, is more requiſite to the Vegetation of the Tree, then the Pith or *Medulla*, which is inward: and as it will hardly Live, as they term it, without a Bark, ſo if that be bound, it will not thrive, which therefore is cured by cutting: for, as I ſaid, Vegetative Spirits in Plants being much aſſiſted by the Temperature of External Qualitys (as alſo by Internal in *Animals*) are as eaſily hurt by the Diſtemperature therof, from which the Bark ſervs to defend it; and as it ſo defends the Body of the Tree, it thereby ſuffers much weather-beating and aduſtion in itſelf, which makes it ſo Rugous and harſh. And becauſ the External Heat draws the Sap outward, as well as upward, therefore the Pith is commonly Inſipid, but the Bark very ſtrong and Stiptike, as may appear by Tan; and ſo is the Wood itſelf more then Pith, as appears by the Salivous Oil of Oaken wood which iſſueth out at the ends in burning, and is very Aſtringent and Deſiccating: ſo alſo the Rinds of ſome Fruits, as Orenges, Lemons, Citrons, and the like, are very Spirituous and Sapid; but then that Pith, which is next to them, is very Inſipid. There is another Character of Trees, which is their Fruit; not particularly of every Kind of them, for all

are not Frugiferous, but generaly, becauſ moſt of them are ſuch, and others which are not ſo, yet being Ligneous, and otherwiſe like unto them (and ſo not to be accounted Herbs, or Graſs) are therefore alſo Trees: and they are generaly thus deſcribed, becauſ this was the chief end of Vegetatives, to be food for Senſitives; and the Fruits are moſt Eſculent, wherin alſo, as in Flowers of Herbs, the Seeds of Trees are conteined more Immediately, as it is ſo ſaid, *whoſe Seed is in it.* All Plants grow out of the Earth Perpendicularly, and ſo the Earth doth nouriſh them: and thus all Grounds bear only according to the Plane or Levell therof, and not according to any Convex or Concave *Superficies:* as a Park may be Impaled with as few Pales, though the ground be riſing and Indented, as if it were plain and Poll; becauſ all the Pales ſtand Perpendicularly, though it require more Rail proportionably, becauſ the Rail runs Horizontaly according to the *Superficies*, and yet we thus meaſure and purchaſe Lands, which bring forth the other way. And heer I ſhall obſerv, that wheras it is ſaid, *The Earth brought forth Graſs, and Herb yielding Seed after his Kind, and the Tree yielding Fruit, whoſe Seed was in itſelf*, God in theſe Six Days made them and all other things in their *Acme* of Perfection, as well as *Adam* in his Adult State, and ſo every way Good; for thus Vegetatives were made not only Complete in themſelves, but pregnant with their Seeds, and ready to propagate others; and to this Individual Perfection of Vegetatives and Senſitives was added the Divine Benediction, *Increaſ and Multiply*; according to the Kind Specificaly: and ſo God having ſett in order Original Generation by Improper Creation, as I have ſhewed, tranſmitted it to the Succeſſive Generations of Nature. And wheras it is a common Problem whether any Poiſonous Vegetatives, or otherwiſe Noxious, as Briars, and Thorns, were before the Fall and Curſ? I ſuppoſe by Analogy of Nature, that as then, though there could be no Elementary Qualitys Actualy Exiſting in their Extremitys, yet they were very Intenſ and Predominant in their own Elementary Bodys; as the Qualitys of Fire in Æther, and of Water in the Sea, which might deſtroy Senſitive *Animals*, if they ſhould be Localy in them; wheras they were ſo ordered, that they were very Gratefull and Uſefull to them; ſo alſo that there were Vegetatives in the ſame Exceſſive degrees of Qualitys,

litys, as now, which we therefore call Poisons in respect to *Animals*, though they be indeed Eminences of Nature in themselvs; and so also Briars, and Thorns, and such others, as are no Anomalous but Perfect Plants: but I suppose that *Animals* were preserved from Poisons by a Natural Abhorrence, and Discretion, having all their most exact Senses, and Bodily Temperaments, which would not accept of any other food then what was suitable therunto; and so they might also avoid Briars, and Thorns, and the like, as they pleased; whose Berrys are also food for Fowls: but I also suppose that there was no such Excessive Quantity therof, as since; and that this was the import of that Curs of the Earth, *Thorns and Thistles it shall bring forth*; that is, wheras before of itself it brought forth abundantly all sorts of Vegetative food for Man and Beasts, and such Poisonous Herbs, and Noxious Plants, as rarely as it doth now good Fruits; so then *vice versa* it should bring forth abundantly Weeds, Thorns, and Thistles, and the like. Thus I have briefly and generaly discoursed of Vegetatives, as before of the fower Elements, according to this Divine History, which is an Universal System of the World, both in the Proper and Improper Creation therof: nor do I intend any particular Historys of them, as *Solomon* spake of them all, from the Ceder of *Lebanon* to the Hysop that is on the wall. But heer, before I conclude, I shall again desire any who will rightly consyder the Nature of Vegetatives, to try whether they also may be made only by Matter and Motion, without their own proper Plastical Spirits, which the Earth did bring forth; and as I have observed the fower Elements were before perfected and prepared in order therunto, without which the Matter alone, as so consydered in itself (though indeed it can never be without the Consubstantiation of Elementary or the Superæthereal Spirit) hath no Automatous Motion of itself, nor, when it is diflocated, any other then to Union and Station, as I have shewed, which is only to recover its due Rest and Position; and therefore certeinly it cannot also Move from Rest, which is Naturaly contrary therunto, (as Verticity is to Polar Position, and therefore cannot be from it) nor hath it any such Plastical Virtue of itself which may guide the Motions therof, but would be only Equidens and Orbicular; wheras Plastical Formation of all Vegetative Bodys, and much more

more of the Bodys of Senſitives, is conſtantly ſo Symmetrical Organical and Curious according to every Kind, and *Species*, and the ſucceſſive Propagation therof, and they ſo very various and different, that he who will not believ Divine Authority, nor Natural Reaſon heerin, may ſatisfy himſelf by his own Senſation, and making uſe of his Microſcope Inſpect the moſt admirable Structure and Mechaniſm of the leaſt Vegetative, or Senſitive, which is compoſed farr otherwiſe, and beyond the moſt admired workmanſhip of any *Bezaleel*, *Dædalus*, *Apelles*, or *Archytas*, and all the Mechanical Borcherys of Art (which yet is all that ſome will allow to Nature itſelf) and when he ſhall have conſydered the moſt exact and Mathematical Conformitys of the one, and Enormitys of the other (which alſo ſhews that Mathematical Exactnes is not, nor cannot be, of Common Uſe) he may eaſily judg with himſelf, that ſince the Intellective Spirit of the moſt Ingenious Man cannot effect the like, certenly it muſt either ſtill be Immediately *Digitus Dei*, and ſo deny this whole Hiſtory of Creation in the Six Days, and all the Works of God therin, whereby he did ſett in order the Courſ of Nature, and conſequently deny all Created Nature; or otherwiſe acknowledg it to be the continual Succeſſion of the ſame Natural Cauſalitys, which alſo lead us back again to the Acknowledgment and Adoration of the Supernatural Creator, who is the only Author ard Inſtitutor therof.

XI. Wherefore let us praiſ the great Creator of Heaven and Earth, as for the Æthereal, ſo alſo for the Aereal Heaven, and for the Water, and the Earth. And heer we muſt ſing his praiſes in Conſort for them all together, as it is once ſaid of them all, that they were Good; though they be in themſelvs ſeveral Elements, and were perfected in two ſeveral Days. Nor is the Goodnes of Vegetatives, which is another *Claſſis* of Creatures, though alſo perfected in the laſt of theſe two Days, pronounced of them, which were before declared Good; but becauſ theſe three Inferior Elements, Air, Water, and Earth, being ſeparated from the Æther by the rapid Motion, and Circumvolution therof about them, and more conjunct among themſelvs, were not perfected one without the other; and the Water (which is the midle Element, and contributed to the Perfection both of the Air, and

and of the Earth, by ascending in Vapors into the Air, and descending itself into the Canales and Pores of the Earth) was not perfected untill this last Day; nor in that alone, but in both these two Days; therefore this Proclamation of their Goodnes and Perfection was reserved for the Consummation of the whole Work of both the Days, and then Relatively to be distributed to all the three Elements, which were so perfected therin: and so they now continue to be Severaly, and also Mutualy Good. And the Æther, which was before made Good in itself, yet had not been Good to others without the Goodnes of the Air; whose Refrigerating Cold doth Temper the vehement Heat, and Refracting Pellucidity the Lucidity of all the Æthereal Luminarys; whereby not only as a common Thorough-fare, but also as a Cooperator therin, it both adapts and conveys the Æthereal Blessings of Rays above, and also the Spirituous Vapors of the Waters beneath (which as an *Alembic*, it distills and refunds) to the Terraqueous Globe. Nor is it only thus Concurrent with Æther, and Water, and the Influences therof, but hath in itself the *Ventos* of Winds, both to Cool and Purify the Atmosphere, and all the Organs of those admirable Sounds, which it doth propagate continualy and successively, and which as so many *Cursores* or swift Messengers make their Reports through the whole Sphere therof, and all the Surface of the Earth: and so is made to be the Cymbal of Nature, which with its Inchanting Musike ravisheth or affrighteth, all Sensitive Spirits; and whereby Men Discourse and Converse one with another, and in Sacred Hymns render their gratefull praises of the whole Creation to the Divine Creator: Also the Atmosphere therof is the very Breath and Life of *Animals*. Neither doth the more Dense Water intercept all the Benefits of Æther, and Air, but partly transmitt them to the Earth, which it contempers with its own Moisture, and is as the Bloud Circulating through the Veins and Arterys therof by constant Reciprocations; conveying Nutriment to all the Cortical Body therof, being both the Inexhaustible Fountain of Drink to all Sensitives, and also conditing their Meats with most gratefull Sapors, and perfuming them with varietys of most delicate Odors. And though both these Elements of Air, and Water, seem very Weak and Infirm, in comparison of the Rapid Æther, and Robust Earth; yet being provoked and armed to execute Divine Revenge, they

so mutualy assist and fortify one another, with unusual and unexpected Rage, that Conflagrations, and Earthquakes, do not much exceed their furious *Herricans*, and violent Inundations. The Earth, though last and lowest of all the Elements, is not only their most Dens and Consistent Fulciment, and Center of their Situation; but also of all their Offices and Services Circumferentialy tending unto it; being the Foundation of the whole Univers, and another Orb in itself, and *Epitome* of the great Globe; wherof all the rest are only Concave Spheres, having only some particular Orbs in themselvs; and on which all those Luminous Orbs cast their smiling Aspects, and the Sun Illustrateth all the other Luminarys, that so they together with himself may give Light unto it: which the nimble Air fanneth and refrigerateth with the Wings of Wind, and watereth the great Garden therof with Dews and Rains: and the officious Water runeth up and down to wash the face of the dusty *Cortex*, and to bath and supple all the Limbs therof; and also floweth forward and backward to carry and recarry the greatest Burdens from Shore to Shore. Thus all the other more Active Elements, as so many Circumsistent Servitors, in their several Courses and Orders, minister unto Earth; which sitting still and resting in itself receiveth all their Homages and Tributes, not Moving, nor being Moved with all their Disorders and Confusions; but founded on the Solid Base of its own Density and Gravity, and strengthned by its own Consistence, and fixed by its own Polarity doth also by its other Qualitys fix all the more subtile and volatile Elementary Spirits. Which covereth its own Nakednes with the Dædalous Embroidery of Leavs and Flowers, and enricheth itself, not only with the Stock of all the hid Treasures of Jewells, Metalls, and Minerals; but also with all the Rents and Revenues of Annual Fruits and Profits both producing and mainteining all Vegetatives, and the chief of Sensitive *Animals*, yea, Man himself, whose Body is also formed of the Congenerous Dust; and so the Earth, which is given to the children of Men, is the Stage of this great *Amphitheater* of the World, wherin all the presen Affairs therof are transacted; and as all the other Elements are now subservient therunto, so heerafter also the Superæther, or Heaven of Heavens, shall be the everlasting Mansion of Blessed Souls.

And now again let us tune our praises to an higher Note, and bless

b'eſs God for the Creation of Vegetatives, Graſs, Herbs, and Trees: and let us contemplate their ſeveral Kinds, and Virtues, which yet are Innumerable and Unknown to us; their Curious Formations, and Oeconomical Adminiſtrations; the careleſs Comlines of their Leavs, and Beautys of their Flowers; the general conformity of their Greennes to our Sight, and the delightfull varietys of all their other Colors: how wonderfully they Compoſe, Nouriſh, and Augment their own Bodys, and Generate others; and having neither Senſ, nor Intellect in themſelvs, yet by their own Innate Plaſtical Virtues perform ſuch works, as no Senſ, or Intellect, can Imitate, or ſufficiently Admire. The Microſcopical perfection wherof doth exactly correſpond with the moſt Critical Senſ, and Organical uſefulnes with the moſt Political Intellect. And as God in the Begining Immediately Created the Heavens and the Earth, and the great Building of the whole World, ſo they Mediately build all the Domicils, and Officines, of their own, and all Superior Bodys, as the Architects therof, and *Vulcans* of all their Organs and Inſtruments: and are themſelvs, together with the Subordinate Elements and Matter, the Immediate Bodys of all Senſitive Spirits, wherin they Reſide, and Operate: and both Dreſs and Digeſt for them all their Nutriment, wherof a great part is of the ſame Vegetative Nature, which affordeth not only Salads for delight, but ſolid food for ſtrongeſt *Animals*, Horſes, Bulls, and the great *Behemoth*; furniſhing alſo Mans Table with *Wine, that maketh glad the Heart of Man, and Oil to make his Face to ſhine, and Bread which ſtrengthneth Mans Heart.* Renewing the Annual Fruits of the Earth as faſt as all the *Animals* can devour them; which in Mans better State were his ſole Diet, and ſince he taſted of their only forbidden Fruit, are his Phyſick, or Natures Tree of Life for healing of the Nations.

SECTION X.

And God said, Let there be Lights in the Firmament of Heaven, to divide the Day from the Night. And let them be for Signes, and for Seasons, and for Days, and for Years. And let them be for Lights in the Firmament of Heaven to give Light upon the Earth. And it was so. And God made two great Lights, the greater Light to rule the Day, and the lesser Light to rule the Night. He made the Starrs also. And God sett them in the Firmament of Heaven to give Light upon the Earth, and to rule over the Day, and over the Night, and to divide the Light from the Darknes. And God saw that it was Good. And the Evening and the Morning were the Fourth Day.

EXPLICATION.

God having in the First Day made the Light, and by it one Hemisphere of the Æther more Luminous then the other, and thereby Day and Night Artificial in that first Day Natural, which did accordingly succeed in the two following Days; now in this Fourth Day did more particularly

larly distinguish them by the several Luminarys, which he made therin for that purpose, and also for Signfications of Times, and Seasons, Months, and Years, and all the variations therof. And he made two chief Lights, the Sun to rule the Day, and the Moon to rule the Night. Also he severaly made all the Starrs according to their several natures; And so sett all these Heavenly Luminarys in their several Positions in the Æther, to run their several Courses therin, and thereby to Illuminate the Earth, and to make all the said Divisions and Distinctions of Time, which was their Goodnes and Perfection. And these were the Works of the Fourth Day.

ILLUSTRATION.

1. *Of the Æthereal Luminarys.* 2. *Of the Sun.* 3. *Of the Moon.* 4. *Of the Starrs.* 5. *Of Comets.* 6. *Of the Goodnes of the Works of the Fourth Day.*

I. WE now proceed to discours of the Second Part of Creation; wherin, when God had before perfected and prepared all the fower Elements, and planted the Earth, which was the last, with Vegetatives, which he produced out of it, he began now to Introduce into them all their more Locomotive Inhabitants: and to shew the Connexion of both these two Parts of Creation, it is again said of the first Created Light, *Sit*, or *Fiat Luminaria*, wherunto, as I suppose, the Singular Number doth referr, and that it must be so understood, *Lux fiat Luminaria*, for it is afterward *Sint* or *Fiant* Pluraly. And I also observ, that wheras it is said of all the other Days Works, when they were finished and perfected, generaly, *God saw that it was Good*; it is said of that first Created Light more particularly, *God saw the Light that it was Good*; though also afterward in the same Day he divided the Light from the Darknes: but as I have before observed of the three Interior Elements, Air, Water, and Earth, that it is not said, *God saw that it was Good*, untill they were all

perfected, and the whole Work finished; so though Day and Night Artificial were made generaly by the division of the Light from the Darknes in the First Day Natural, yet becaus they were also to be more particularly distinguished by the Luminarys, and to be so ruled by the two great Lights expressly made for that purpose, that is, the Sun to rule the Day, and the Moon to rule the Night, therefore the Goodnes is not pronounced of Day and Night in the First Day, but in this Fourth Day, wherin the whole perfection therof was consummated: so accurately exact is God the Author of Nature, and Scripture, both in his Operation, and Expressions. And though the common Light, and Day and Night thereby, in Æther, and the ascent of Vapors in Air, and eduction of Earth above the Waters, and madefaction therof by them, was sufficient for the production of Vegetatives, which therupon were Immediately produced, as I have shewed; yet before the Introduction of Fishes and Fowls into the Water, and Air; and Beasts and Man into Earth; it was requisite that the Æther, which Sensitive *Animals* only can behold, and by the Light therof all other Spectable things, should be made perfect and complete, and adorned with all the various Luminarys, sett in their various Positions, and runing their several Courses, and so ordered and disposed as might best serv both for the Sensation of Sensitive *Animals*, and Contemplation of Intellective Man. And though these Luminarys were made after Vegetatives, yet they are not therefore Vegetative, or of a Superior Nature above Vegetatives, as Vegetatives are above all that were made before them, and as Man the chief of all was made last; for though indeed this Order is observed in each of the Parts of the Creation; and so the Creatures made in the last were respectively more excellent, then they which were made in the first Part therof; yet the Luminarys, which were made in the first of the last three Days, are much Inferior to Vegetatives, which were made in the last of the three first Days; for they are Elementary, and of the Elementary *Classis*, though chief *Composita* of the chief Element, Æther: but all Elements and Elementary things are Classicaly below Vegetatives; and though Planets have Locomotion out of their places, which Vegetatives have not, but only in their places, being all Rooted in the Earth; yet Locomotion is also in the Matter, when it is dislocated, and indeed

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no Material Spirit can so elevate their Bodys and cause them to ascend, as Matter doth necessarily to Union, and to prevent Vacuity, as I have shewed: and much less are the Planets Sensitive, or Intellective in themselvs, or any such Deitys or *Dæmons*, as the Idolatry of Heathens made them, and their Philosophy durst not contradict; nor yet Moved by Intelligences or Angels, as the Rabbins and Scholemen suppose: for they can be only External Movers therof, wheras Planets Move by their own Natural Power, and Intrinsecal Virtue, like the Verticity of Magnets, and are not Moved like Studds fixed in solid Spheres, as I have proved, and as the Eccentrical Motions of the Planets therin do thereby plainly disprove; and therefore others affirm them to be Magnets, and the Earth, which is the great Magnet, to be a Planet; but certeinly Æther and Earth are two different Elements, having different Elementary Spirits, wherin the same Qualitys cannot Subsist, as I have shewed; and so the Æther cannot be Magnetical, nor the Earth Planetary, unles we can also make the Æther to be Terrestrial, and the Earth Æthereal; wheras Heaven and Earth are generaly contradistinguished in the Begining, and particularly Æther and Earth were made two several Elements in two several Days: and Æther being, as I have shewed, Fluid, cannot possibly be Magnetical, which requires a very solid Consistence; certeinly the whole Æther, which is a Concave Sphere, cannot be so Magnetical as Earth, which is an Orbicular Globe; for it cannot have an *Axis*, and consequently Magnetical Poles; as if a Ring of Iron be touched with a Loadstone, it will have only one Pole: and though the Æthereal Planets be Orbs, yet they also are Fluid: and Sensibly all Æthereal Motions are Circular and Perpetual; wheras Magnetical Verticity is only Polar, or to a Pole, and not round about the Center, nor about an *Axis*, like Motion of Planets, but to the Poles therof, when by Trepidation it passeth beyond them; and so Moving its own *Axis* the same way, that is, Meridionaly, and not according to the *Æquator* of its own Body, as I have shewed: wheras if Earth, and Water, and Air, as they say, and also Æther, and the Planets, were all Magnetical, they should make one Magnetical Orb, and all Move one and the same way; which plainly they do not: or if otherwise one be Moved about another, as they say the Moon is about the Earth, it should observ the Magnetike Law, which it doth

doth not, as I ſhall heerafter demonſtrate of the Moon. Thus the Magnetical Planetary Motions are very different, and indeed oppoſite in their very Natures, and Ends; for Planetary Virtue makes the Planets to abhorr all Reſt, and Magnetical Verticity is to reduce Magnets to their Polar Reſt. Wherefore we may not confound them, though they are both Elementary Motions, and not only Motions of the Matter, or only by the *Pondus* therof, as the Flux and Reflux of Water; nor by Impulſ, like Winds in the Air, wherof I have formerly diſcourſed; nor yet any Vegetative, Senſitive, or Intellective Motions, wherof I ſhall diſcourſ heerafter: as indeed all things are Motive or Mobile one way or other within the whole Globe of the World, and the Circumferential Superæther, and Centrical Earth are only Immobile: and as we are Senſibly ſatisfied concerning Magnetical Verticity, ſo thereby we may conceiv of theſe other Planetary Virtues, which God produced in this Fourth Day in the Planets, as he did before the Magnetical Virtue in the Earth and Magnets. Whereby alſo it plainly appears that Motion is not only of the Matter, but alſo that Elementary Spirits may have a Motive and Directive Power in themſelvs, as well as any other Superior Spirits; and from their different kinds and ways of Motion we may collect the very different Motive Powers and Virtues of the ſeveral Movers: wherof Matter is moſt general, and only tending unto a State of Reſt in the whole Body therof, and Center of itſelf; wheras Magnets have a more particular Poſition of their Bodys, which is Polar Reſt, North and South, and a Verticity particularly to reduce them to it; and Planets have their ſeveral and various Poſitions, and Courſes, and an anſwerable Planetary Virtue, which ſo ſetts them, and Moves them, and makes them to abhorr all Reſt, and Vegetative Spirits are more Plaſtical, but Involuntary, and Senſitive Spontaneous or Voluntary Movers, and more indifferent either to Motion or Reſt. And thus as Magnetical Bodys may Move from Pole to Pole Semicircularly by their Magnetical Verticity, ſo we may very well conceiv how alſo Planets may Move Circularly, which is only a continuation of Motion through the whole Circle, whereby alſo they may ſo Move Perpetualy; and as the Needle doth leap to the Loadſtone by the Magnetical Virtue Actuated in itſelf, which Motion is Progreſſively Locomotive, ſo may alſo Planets by their Planetary Virtue, which

which is always Actual in them, Move Progressively in the Circles which they describe; but though the Magnetical Virtue which setts the Magnetical Body in one determinate Polar Position may be removed, as I have shewed, and pass from that part of the Magnet wherin it now seats itself, and which thereby becomes Polar, unto any other part therof, and so render that Polar, as may be sensibly seen in any *Terrella*, (whereby it is plainly proved that the Magnetical Virtue is a Spiritual Quality, which can so remove itself from any part of the Body of the Matter to another, and not any fixed Affection of the Matter itself) yet Planetary Virtue, being seated in the whole Orbicular Body of the Planet, doth not, nor can it, so remove itself; becaus it always possesseth the whole Body, not Polarly, or Ovaly, but Orbicularly; or at least it is therefore not to be discerned so to vary its own Situation in the Planetary Body. Now, as God in the First Day did Actuate that proper Æthereal Virtue, which also may be termed Planetary, causing it thereby to Move about the Inferior Globe from East to West in fower and twenty hours or therabout, whereby he made Day and Night, which could not otherwise be, without such a Circumgyration of the Æther, and of the Globe of Light therin, as now the Æther doth still Move with all the Planets and Starrs in it, (whose Planetary Virtue is diversified into several other Motions, which yet are all only Planetary Motion Generically; as if, wheras the Polar Position of the Magnetike Earth is only North and South, God should have diversified it in other Magnets or *Terrellæ*, and made some East and West, and so to any other Points) so it is also said that in this Fourth Day he made *Lights in the Firmament of Heaven to divide the Day from the Night*; that is, to caus more particular Variations therof, longer, or shorter, sooner, or later, and the like; which must be by their Planetary Virtues Actuated in them, whereby they Move respectively in the Æther, as the Æther doth about the Inferior Globe; and so they were not only for Days, but also for Years, Months, and the like, which, though more or less then the Solar Year, are the respective Years of their particular Planets, Lunar, Jovial, or the like, as we commonly call them. And so God made not only the two great Lights to rule the Day and the Night, (that is, the Sun and Moon as both Scripture and Nature do declare) but it is said, *He made the Starrs also. And*

God sett them in the Firmament of Heaven, so as to perform these several Offices by all their various Courses. Thus I conceiv that the Æther having the Planetary Virtue therof Actuated in it in the First Day, when God said, *Let there be Light*, a great part of that Æthereal Light was divided from the common Light of Æther, which was left and still is in the whole Body therof, though not so Visible to us; and that Globe of Light, as it was generaly Connatural with the Æthereal Light, being in one Hemispere of Æther, was carried about Diurnaly by it and with it, and not any other way by any special Planetary Virtue in itself, which was not Actuated before this Fourth Day; but that this common Globe of Light so divided, and wherof we have no other account, was the *Chaos* of the Potentialitys of all the Planetary Virtues, which were afterward educed out of it; and that then they were not only Moved in and with the common Æther Diurnaly, but by their own special Planetary Virtues Predominant in them, and directing every one of them to Move according to their several Courses; for though Locomotive Virtue be common to Æther, and all Æthereal Bodys, yet the Motion of Æther from East to West Diurnaly was by a proper Planetary Virtue, as I have said, Actuated in it, when God so divided it from that Globe of Light (which is eminently called Light and made Day; and so mutualy that Globe of Light) from the rest of the Æther, and Æthereal Light, (which is Comparatively called Darknes, becaus it made only Night, as I have shewed) And so this particular *Chaos* of all the Planetary Potentialitys being so divided from the common Æther, and not having any Planetary Virtue Actuated therin, was carried about in and with the common Æther in the three First Days; and then it was again divided into all the particular Planets, and all their particular Planetary Virtues were respectively Actuated therin, and by those special Planetary Virtues they perform all their several Planetary Motions and Courses. Nor is it less wonderfull, if we rightly consyder it, how they Move in their several Zodiaks; being indeed no such Gemmeous Studds, or *Bullæ*, fixed in the Æther, as some have imagined; for both the Æther, and they also, being Æthereal Bodys, are Fluid; nor do they Fly, or swim therin, by any Spontaneous Power, like Fowls in the Air, and Fishes in the Sea, becaus they are not Spontaneous: but they are all

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Ætheruli, as I may so term them; and so their Original Globe of Light was only such a particular Portion of the common Body of Æther, not differing from the rest, but only as it was more Lucid; for so it is said of the formation therof, that *God divided the Light from the Darknes*, in the Æther, but not any part of the Æther from the Light; or the Light from it: nor is the Body of the Sun, or any Planet, more Condensated, as I have shewed; though they shall hêerafter sink through the Fluid Æther to the Air and Earth at the Last Day, when they shall be discomposed and disordered, wheras now they are Connaturaly adapted to the Æthereal Heaven: and so it is said of the Light; *Fiat Luminaria in Expanso*, and they are all equaly Expanded in it; but their Light is farr more Conspissated, as it was in their Original *Globus:* and yet such Conspissation of a Spiritual Quality doth not make the Lucid Body to be more Dens or Grave, which also proves Light not to be Corporeal, but a Spiritual Quality, as I have said: and indeed, as all Heat doth Naturaly Rarefy, so should they be rather made more Rare and Light thereby, but that Æthereal Bodys are already as Rare as any Elementary Power can make them to be; and yet though we may easily conceiv them, being Equirare with the common Body of Æther, to be poised therin, as Glass Bubbles in Water: it is also to be consydered, why, or how, they should still Move in their Regular Circularitys, and not to be diverted or removed, as such Glass Bubbles may very easily be: and we have the true account heerof in the Text, *Posuit*, he sett them so at first, and so they are still continued, not by an Immediate Manutenence; as he doth not Move them by an Immediate Manuduction, but by the same Planetary Virtue Actuated in them, and causing them Naturaly so to Move in their own Zodiaks. Now becaus, as I have observed, there is no *Produxit* of any of these Planets, as there was before of Vegetatives, and afterward of Sensitives; and indeed, becaus there was such a Globe of Light decided before from the Æther, which was the common *Chaos* of them all, and wherof they were so many particular Decisions, I conceiv that they were so many several *Composita* made therof, whereby they are all thus different, and several one from another, as they are all from the Planetary Æther, (as it is said God divided between their Light and the other Æthereal Light) and that every

one of them is a Specificaly different *Compoſitum* in itſelf: and that every Individual Planet is ſuch a *Phœnix* in its kind, that it is alſo a whole *Species* in itſelf: wherefore it is ſaid that God particularly made, not only the *two great Lights*, but *the Starrs alſo*, and ſo it is ſaid, *There is one Glory of the Sun, and another of the Moon, and another Glory of the Starrs; for one Starr differeth from another Starr in Glory.* And therefore their Creation is thus ſpecialy mentioned, and was the whole Work of this Fourth Day, and ſo I conceiv, there are no ſuch Æthereal *Compoſita*, as Stones, Metalls, Minerals, are Terreſtrial *Compoſita*, and wherof no ſuch ſpecial Creation is mentioned, as I have obſerved; but neither that there is a Simple Spirit of every one of them, Created in the Begining by a Proper Creation. And I conceiv that theſe vaſt *Individua*, which are alſo ſo many *Species* in themſelvs, made Immediately by God, as I ſaid, can neither be Naturaly diminiſhed, nor multiplied, as Comets, which are Anomalous, may be: for ſo the Starrs are ſaid to be for ever, and it is ſaid of God their Creator and Preſerver, *He telleth the number of the Starrs, he calleth them all by their Names*, though Supernaturaly and Miraculouſly he may compoſe a new Starr, as probably that which appeared at our Saviours Birth was ſuch an extraordinary Starr, and ſo is ſpecialy called, *His Starr*; which yet did not continue, but, after it had performed the End for which it was made, was again diſſolved: for otherwiſe the Ordinances of Heaven, which are ſaid to be Unchangeable, ſhould be changed, and the Conſtellations therof diſordered. And though the Starrs be every one ſuch a ſeveral *Species*, yet there is alſo a Combination of them all generaly, as they are all one Hoſt, and of ſome more ſpecialy, which are called Conſtellations, and are not only ſuch in Name, but alſo deſcribed to be ſuch in Nature: ſo wheras it is heer ſaid, that God made the greater Light, that is, the Sun, to rule the Day, and the leſs, that is, the Moon, to rule the Night, the Pſalmiſt ſaith, *To him that made great Lights*, &c. *The Sun to rule by Day*, &c. *The Moon and Starrs to rule by Night*, &c. where he divideth the Moon and all the Starrs, as a Separate Conſtellation from the Sun alone, and attributeth unto them their ſeveral Offices to rule by Day, and by Night; for though all the Starrs do not attend the Moon every Night, yet they do by turns; and therefore ſhe alone is ſaid to rule the Night, becauſ

cauſ ſhe doth ſo every Night, more or leſs: and though, as I ſaid, the common Æthereal Light divided from the whole Globe of Light, (which was the Stellant Light, and wherof the Planets and Starrs were all made afrerward) did make the firſt Night, as that Globe of Light did the firſt Day; and that Nocturnal Light is therefore called Darknes Comparatively, which had neither Moon nor Starr in it, yet in order to Senſitives, who need more Nocturnal Light, the Moon and Starrs, or a great part of them, were added in this Fourth Day, to rule the Night; whereof therefore there is alſo ſuch an Additional Expreſſion, *To rule over the Day, and over the Night, and to divide the Light from the Darknes.* Thus alſo more ſpecialy there are ſaid to be Courſes of the Starrs, and many of their Conſtellations particularly named, and their Cooperations denoted, *Canſt thou bind the ſweet Influences of* Pleiades, *or looſ the Bonds of* Orion? *Canſt thou bring forth* Mazzaroth *in his ſeaſon? or, Canſt thou guide* Arcturus *with his Sons?* Now wheras ſome have Curiouſly inquired in what time of the Year the World was Created; which the Poets fanſy to have been in the Spring, becauſ that indeed is the time of Renovation; and the Rabbins in the Autumn, becauſ then all Fruits, and the like, are in their Perfection, as they were firſt Created; certeinly neither of their Computations can be true of the very firſt Creation in the Begining, for then there was no Year, nor any Commencement therof; but only Day and Night generaly in the three firſt Days; and in the Fourth Day, the Planets were made for Days, and for Years; and then they muſt alſo calculate their Computation for the Meridian of Paradiſe; otherwiſe, when it was Spring in one part of the Earth, it was Autumn in the other; as it is now to us and our *Antipodes.* But ſuch is our Human Vanity, that we will Curiouſly pry into thoſe things, which God hath thought fitt to Concele, and yet not acquieſce in thoſe things, which he hath pleaſed to Revele.

II. In the Hiſtory of the Creation of the Planets and Starrs it is farther ſaid of them, that *God ſett them in the Firmament of Heaven to give Light upon the Earth.* Wherefore certeinly they are all Lucid, not only as all Æther is in itſelf, but ſo as to give Light upon the Earth, otherwiſe they could not ſo give Light upon it; and ſo certeinly the Earth is not Lucid in itſelf, other-

wise it should not need to be Illuminated by these Heavenly Luminarys. Thus as the Apostle saith, *There are Bodys Celestial, and Bodys Terrestrial; but the Glory of the Celestial is one, and the Glory of the Terrestrial is another*; and so neither are the Planets any Magnets, nor the Earth a Planet, but, as several Elementary Natures, they differ Genericaly, and have their several Generical Glorys, that is, their different Goodness described and expressed in the History of their Creation, severaly in several Days: and which also evidently appeareth in Nature, as may satisfy any, except such who being confounded in their own Understandings can also confound Heaven and Earth, which differ farr more and otherwise then the Æther and Planets differ one from another; for they are Bodys Terrestrial, and Bodys Celestial, wheras these are all Genericaly Bodys Celestial, though they also Specificaly differ one from another in Glory: And of all these Celestial Bodys the Sun is incomparably most Glorious; who, as I observed, alone is opposed to the Moon and all the Starrs, and also preferred before them all; for they with his Solar Illustrations and Secundary Light only make Night in the backside of the Earth, which is but as the Shadow of his Diurnal Presence, and therefore is still called, Darknes: and so he is said to rule by Day, and they to rule by Night. Whose darting Rays penetrate through all the Spectable World, and are bounded only by the two common Bounds of Nature, Superæther, and Earth; and in all the Elementary World there is *Nihil simile, aut secundum.* Wherefore Heathen generaly worshiped him as a God, who yet in the Scale of Nature is farr Inferior to the Vegetative Deitys of *Egypt*: but they who place him in the Center of the World, and fasten him to it, though otherwise they almost Idolise him, yet heerby they even deprive him of that true Glory which God and Scripture ascribe unto him: and therefore, as I promised, and becaus it is so pertinacious a Controversy, I shall now again prove the Earth not to Move about the Sun, but the Sun and Æther about the Earth; and that the Glory of the Celestial Bodys is to Move about the Terrestrial, and to bestow their Influences upon them, and of the Terrestrial to Rest, and receiv all their Benefits. Thus the Text saith expresly, God made the Luminarys to give Light upon the Earth, whereby they Rule Day and Night, and

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all the Seasons; and therefore they are called Ordinances of Heaven, and not of the Earth; as God saith, *Knowest thou the Ordinances of Heaven? Canst thou sett the Dominion therof on the Earth?* Now where the Rule and Dominion is, there is also the Motion and Action, whereby it is exercised; and so thereby the Planets are said to divide the Light from the Darknes, which the Earth should rather do, if it did Move about the Sun, and the Sun should only minister, and as it were hold a Candle to the Earth Moving about it: and it is also said in the First Day, that God himself so *divided the Light from the Darknes* before Sun or Moon were made, and thereby made Day and Night: and as the Sun doth now divide the Diurnal Light from the Nocturnal Darknes by his Light, so doth the Moon divide the Nocturnal Darknes from the Diurnal Light by her Light, and so she was made to rule the Night, as well as the Sun to rule the Day; which certeinly she doth by her Motion about the Earth, and therefore so doth also the Sun by his Motion about the Earth: wherefore *Joshua*, who was the Disciple and next Successor of our Divine Philosopher *Moses*, saith *Sun stand thou still upon* Gibeon, *and thou Moon in the vally of* Ajalon. Which conjunction of Sun and Moon had been very incongruous, if the Sun did not Move as well as the Moon Diurnaly, as he doth also Annualy, and she Menstrualy; but *Joshua* should rather have said, Earth and Moon stand still, or only Sun stand thou still; for so he had spoke either properly and truly, or Popularly, as they term it, that is, falsly: wheras it is most absurd to conceiv him to speak both properly and Popularly, truly and falsly, at the same time, and in the same words. And wheras they say this was only Popular speaking, they thereby do acknowledg that Mankind was antiently of this Opinion before *Pythagoras*, *Leucippus*, and other Græcian Wits fansied the contrary, and therefore propounded it as their Novell Invention; though I am not satisfied that they affirmed any more then the Diurnal Motion of the Earth about its own Center, to save, as they supposed, the vast Æther so great a labor; but I conceiv that they allowed the Sun also to Move Annualy, aswell as the Moon Menstrualy: wheras our new Philosophers (whose Inventions are only Additions, and their Additions some greater Absurditys) will Move the Earth, not only Diurnaly, but also Annualy; which is both con-

contrary to Reason and Sens, as I shall shew heerafter, and also most contradictory to Scripture, the Authority wherof no Christian should contemn, much less oppose; and that saith expresly, *The Sun stood still, and the Moon staid:* and though it is true, that the Sun doth not Move Diurnaly by his own Planetary Virtue, as he doth about his *Axis*, and Annualy; but is carried about by the Diurnal Motion of the Æther, which so Moves by its own Planetary Virtue, as I have shewed; yet even so the Sun Moves together with the Æther Diurnaly; for Motion being, as I said, only a Transition from Place to Place, though the Sun doth not so change his Place in the Æther by the Diurnal Motion therof, yet he doth in and with the Æther thereby change his Place in the whole Body of the World, and consequently Move; as Rare Bodys do Move Localy in ascending upward, though they are Moved Virtualy by the elevation of more Dens Bodys, as I have shewed: and so also the Sun, and Moon, and Starrs, and Æther itself, staid in all their Motions, according to the Context. *So the Sun stood still in the midst of Heaven, and hasted not to go down about a whole Day*; whereby, as *Siracides* interpreteth it, *One Day was as long as two*: and afterward the whole *Chorus* of Heaven proceeded to Move again according to all the several Motions therof, as it did before: and certeinly the other is *Maledicta expositio quæ corrumpit Textum*, and destroieth the very Literal meaning of such an Historical and Memorable Matter of Fact: and though I hope such Interpreters of Scripture may be true Believers of Matters of Faith, yet the wild Liberty of such Interpretations doth so farr render Scripture no Scripture, by an acknowledgment only of the Letter, which they dare not deny, and yet by denying the Sens, which they will not admitt. Wherefore plainly I will proceed to deal with them as I would with Heathen, or any others, that is, by Reason and Sens: Now, whereas they affirm three Motions of the Earth, I will accordingly examin them, and first clearly explain them, becaus I doubt they are not sufficiently understood; nor indeed the very Doctrine of Motion generaly; which some make only to be Remotion or Distancing of one Body from another, and so confound the Motion of one Body with the Rest of others, as I formerly observed; and others confound opposite Motions from East to West, and from West to East; and generaly all confound Locomotive Acti-

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on and Paſſion, which are very different, that is, one a Moving, and the other a being Moved, as I ſaid, the Sun Moveth Actively in his Annual Motion, and Paſſively in his Diurnal Motion; and though both theſe be only Motions or Tranſitions in themſelvs, yet clearly one is an Active Motion, and the other a Paſſive Motion; which though they may not differ as Motions, yet do ſo differ as they are Active or Paſſive; and as they confound Motions, ſo alſo the Terms of Barocenter and Center, and Poles, *Axis*, and *Æquator*, and the like, as I have ſhewed, which are Æquivocal Names according to the ſeveral Natures of the Things wherof they are expreſſed; for ſo they may be either only Mathematical, as all theſe may be painted and deſcribed on any Globe of Wood, or Stone, or the like, Indifferently, becauſ there are no ſuch things Phyſicaly in the Bodys therof; or alſo Phyſical, either in Terreſtrial Bodys, as Magnets, wherin the Magnetical Virtue doth cauſ them all to be Phyſicaly to fix the Magnetical Body accordingly in one determinate Polar Poſition; or in Celeſtial Bodys, as Planets, wherin the Planetary Virtue doth cauſ them alſo to be Phyſicaly to Move the Planetary Body accordingly in ſuch a determinate Courſ, as I have formerly ſhewed, and ſhall now upon this occaſion clearly diſcover; whereby we may no longer confound ourſelvs with ſuch confuſed Notions concerning things which are ſo different and diſtinct in their own Natures, and whereby the Truth itſelf ſhall evidently appear. And I ſhall make the Body of any man himſelf to be the Diagramm, and ſuppoſe him to throw a Bowl from him, certeinly while the Bowl Moveth from him he doth not Move from the Bowl, becauſ he ſtandeth ſtill in the ſame place and at the ſame diſtance from the Jack or mark, toward which the Bowl runeth, and which doth not ſtay in the ſame place where it was, and ſo certeinly if the Sun Move about the Earth, the Earth doth not Move about it. Again, I will ſuppoſe his Right hand to be Eaſt, and his Left Weſt, and his Face before, and his Back Behind; and ſo let him throw the Bowl with his Right hand forward, or before his Face, toward his Left hand; this, as I have ſuppoſed, is as a Motion from Eaſt to Weſt: but if he be an *Ehud*, or *Scævola*, let him throw the Bowl with his Left hand forward, or before his Face, toward his Right hand, and then this, as I have ſuppoſed, will be Motion from Weſt to Eaſt, which certeinly is an oppoſite

Motion to the other; for ſo if two ſeveral Bowls were thrown at the ſame time by two ſeveral men, as before, in the ſame Line, they would meet and oppoſe one another: but if the firſt Right-handed man, after he had thrown the Bowl from his Right hand before his Face to his Left hand, ſhould with his Left hand proceed to throw it behind his Back to his Right hand again; though this be from Left to Right, yet it is ſtill from Eaſt to Weſt, and not oppoſite to the former Motion; becauſ that was before the Face, and this is behind the Back, and ſo only a continuation of the former Motion, and the Circle that it deſcribes: and if two ſeveral men ſhould in the ſame Line ſo throw one Bowl before his Face to his Left hand, and another behind his Back to his Right hand, yet they ſhould never meet, nor oppoſe, but follow one another: and ſo the Sun Moveth about the Earth from Eaſt to Weſt, and not from Weſt to Eaſt, but Diurnaly. But now we will alſo ſuppoſe the Earth Moving about the Sun to be as the Bowl, or a Globe, and to have correſpondent Points deſcribed on it, wherof the Eaſt ſhall be *India*, the Weſt *Spain*, the Forepart *Æthiopia*, and the Backpart *Guiana*, according to ſuch their Poſition and Illumination by the Sun, which as we ſuppoſed before, to be as the Bowl, ſo now we will ſuppoſe to be as the Body; and we all know, and agree, that the Earth is Daily Illuminated in *India* before it is Illuminated in *Æthiopia*, and in *Æthiopia* before *Spain*, and in *Spain* before *Guiana*, and ſo from Eaſt to Weſt: wherefore *India*, or the Eaſt part of the Earth, being next to the Sun, whereby it may be Illuminated, we muſt alſo ſuppoſe the Sun Illuminating it to be Weſt, becauſ it is oppoſite to it; and then the Earth being in the ſame Poſition in itſelf (as certeinly it muſt be, whether it Move about the Sun, or the Sun about it) that is, having *Æthiopia* as its forepart, and *Guiana* its Backpart, as before, and without any Inverſion of the Poles, or making *Æthiopia*, which was the Forepart, to be the Backpart, and *Guiana*, which was the Backpart, to be the Forepart, it muſt Move itſelf Diurnaly from Weſt to Eaſt, that is from a Weſt Point of the *Ubi* of the Sun toward an Eaſt Point therof, whereby *Æthiopia* being the Forepart muſt be next Illuminated, as before, and not *Guiana*. Thus alſo in the Annual Motion of the Sun about the Earth, it Moves in the Zodiak from *Aries* to *Cancer*, and from *Cancer* to *Libra*, and from *Libra* to *Capricorn*; or from

from West to East, that is, from *Spain*, or the West Point of the Earth, toward the East, by *Æthiopia*; and not by *Guiana*, which is from East to West, as I have shewed: Now, if we suppose the Earth, as the Bowl, to Move about the Sun, as the Body Annualy, and the Sun to be in the Center, and the Earth in the Zodiak, keeping the same Position as before, that is, having *Æthiopia* as the Forepart, and *Guiana* as the Backpart, we must suppose an East Point in the *Ubi* of the Sun, opposite to *Spain*, or the West Point in the Earth, and then the Earth must Move from that East Point to the West, whereby *Æthiopia* may be next opposite to the Sun, and not *Guiana*; for as East is Relatively opposite to West, and West to East, so the Correspondent Points of the Sun and Earth must be Relatively East and West, and opposite one to another; and so consequently must their Motions be Relatively opposite: and however we may call East West, or West East, or that which is Relatively East in respect of one Body, may be West in respect of another, yet in the same respect it cannot be both East and West; nor the same Motion in the same respect both from East to West, and from West to East; but as such, they must necessarily be different and opposite. Thus by fixing fower such Correspondent Points in the Body or *Ubi* of a Globe or Circle, we may fix our apprehensions of the Position, or Motion therof. And though thus farr I acknowledg that the *Phænomena* generaly may be solved, if either we should suppose the Sun to Move about the Earth from West to East, or the Earth about the Sun from East to West Diurnaly, supposing also *Æthiopia* to be the Backpart, and *Guiana* to be Forepart, which are as different and opposite Positions one way, as East and West are the other way; yet certeinly the particular *Phænomenon* of that Position cannot be solved both ways, becauf it is only one way, and not the other: for though we may call the Forepart the Backpart, or the Backpart the Forepart, or they may be so in other Relative respects, (which plainly proves Place to be such a Relative Position, as I have shewed) yet they cannot be so in one and the same respect: wheras certeinly the Real Position of each of the Bodys of the Sun and Earth, whatsoever it be, is one and the same, and not different and oppositе to itself; but the Position of one is Relatively different and opposite to the Position of the other: and so consequently are there Motions. Thus also I

grant, that though the Sun, which, I say, Moves from West to East Annualy about the Earth, should Realy Move about it from East to West without any supposed variation of the Position therof, whereby the Sun, proceeding from *Libra* to *Cancer*, should first Illuminate *India*, or the East, and next *Æthiopia*, or the Forepart, and not *Guiana*, or the Backpart, yet the *Phænomena* generaly might be thereby solved, and there should be the like Æquinoxes, Solstices, and all other intermediate Illuminations, throughout the Year, in all the Earth; but this particular *Phænomenon* can not be solved thereby; for since we know that *India* is first Illuminated, and *Guiana* next Annualy, by the Sun passing from *Spain* to *Æthiopia*, and so to *India* and *Guiana*, *India* cannot be first Illuminated, and *Æthiopia* next; becaus such different and opposite ways of Illumination cannot be without different and opposite Motions of the Illuminator, that is, of the Sun about the Earth; and such different and opposite Motions cannot be at the same time in the same Body of the Sun, and in the same Relative respect to the Body of the Earth. And so it may be, though we suppose the Earth to Move Annualy about the Sun one way or other. Thus wheras it is said, that whether the Sun Move about the Earth, or the Earth about the Sun one way or other, the *Phænomena* will be the same, it is true generaly of such as are Relatively the same one way or other, (as it is so in all such Relations) but not of such particular *Phænomena* in themselvs Positively, which must be only such as they are, and cannot be otherwise. But this I only premise, and do not insist upon either of these two Motions Diurnal, or Annual; becaus, as we do affirm two Active Motions in the Sun, that is, one about his own *Axis*, and the other in his Zodiak or Circle which he describes, and which is his Annual Motion; and though indeed the other be not his own Diurnal Motion Actively, but the Motion of the Æther, yet we cannot deny, that it may be supposed that there are two such Motions in the Earth, which therin may be Annual and Diurnal Actively; and both these Motions must be supposed, becaus though the Sun cannot Illuminate the Globe of the Earth standing still, and only by turning about his own *Axis*, but must be Moved about by the Æther Diurnaly; nor otherwise then by describing a Circle about it Annualy; yet the Globe of the Earth may be Illuminated by the Motion of the

Earth

Earth itself about its own Center toward the Sun standing still; but the great *Criterion*, as I conceiv, is, that wheras only two Motions are ascribed to the Sun, and a third to the Æther, which is another Body Moving also the Sun in and with itself, whether the Earth alone can have all these three Motions in itself, as it must have to solv the *Phænomenon* of the very Motion therof. And now I shall first prove this third Motion to be Necessary, and afterward to be both Absurd, and Impossible; lest having shewed the Absurdity and Impossibility any may afterward deny or doubt the Necessity therof. And heer again I shall make himself that denieth or doubteth it to be the Diagramm; and let him place a Terrestrial Globe, how he pleaseth, on one of his hands, supposing it to turn round also of itself about, according to its own *Æquator*, like the supposed Diurnal Motion therof with either Pole toward his Body, as if the Earth were in *Cancer*, or *Capricorn*, and suppose his Body to be the Sun, and so let him turn his hand with the Globe on it from the Right part of his Body toward the Left, or from East to West, like the supposed Annual Motion of the Earth in the Zodiak therof, without any third Motion to Incline the Poles one way or other; and then the same Pole therof, which was Inward or next to the Body, or Sun, will still be so, and it will not be varied by either of the other two Motions; and so only that Hemisphere, whether Arctike, or Antarctike, should be Illuminated, both Diurnaly, and Annualy, and not the other at any time, which is manifestly false: wherefore to solv this there must Necessarily be a third Motion supposed to Incline it, which I shall therefore call Inclinatory; and which he may also add to the other two, by turning the Pole that is toward his Body with his other hand, (while he turneth the Globe, as before, from Right to Left, or from East to West,) equaly the other way, that is, from Left to Right, or from West to East, according to the Meridian of the Globe; which though the same way from West to East, is another Motion, Annualy, and not Diurnaly; nor according to the Æquator therof, like the supposed Diurnal Motion, and opposite to the Annual Motion; and by this third Inclinatory Motion the other Pole will also be turned toward the Body or Sun, and consequently the other Hemisphere also Illuminated, but without such Inclination the *Phænomena* cannot be solved. And now I shall shew the Absurdity of such a

ſuppoſed third Motion of the Earth, if it were Poſſible in Nature. We all agree that the Earth is Magnetical, or that like every Magnet, or *Terrella* it hath two Poles or Polar Points, exactly North and South, without any the leaſt Inclination or Variation in themſelvs, either toward Eaſt, or Weſt; and nothing elſ can make the Earth, which is the great Magnet ſo to Incline or vary from the Polarity therof, which is according to its own Natural Poſition; though leſs Magnets may be Inclined or varied by greater, or by being fixed in a contrary Poſition. Now as theſe two Polar Points muſt be Correſpondent to two ſuch Points in the Body of the Superæther, if that be Immovable, as we ſuppoſe, or in the *Ubi* therof, in the Poſition of the Whole, though the Parts may Move round therin; ſo alſo to two like Points in the Æther, which, if the *Axis* of the Earth were produced beyond the Poles therof through the Æther to the utmoſt Circumference of the Globe of the World, it muſt Interſect, and ſo Terminate in two ſuch Points in the utmoſt *Superficies* of the Superæther: though theſe two Points or Poles of the Superæther may be only Mathematical; and however ſome deny that there are two ſuch Phyſical Points or Poles of Æther to direct the Motion therof, as I have ſhewed, yet generaly it is conceived that there is ſome Phyſical Correſpondence between them, and the Poles of the Earth; and therefore ſome aſſigne the Influence therof, or of ſome Northſtarr about the North Pole, to be the Cauſ of the Polarity of the Earth; and others aſcribe it to ſome Northern and Southern Atoms, flowing and reflowing thence forward and backward, I know not how; and every Aſtronomer tells us that there are ſuch Poles, *Axis*, and *Æquator* of the Æther. All which Opinions, whether true or falſ, preſuppoſe ſuch Poles or Points in the Æther, and that they ſome way or other Correſpond with the Poles of the Earth, which this *Hypotheſis* of the Inclinatory Motion of the Earth doth deny, and ſuppoſe only a Northern and Southern Hemiſphere of the Æther, to which the reſpective Poles in the Earth may point and Correſpond in every Part and Point therof, according to ſuch an Inclinatory Motion; whereby if an *Axis* were produced beyond the Poles of the Earth to the Æthereal Hemiſpheres, each Pole ſo produced would vary through all the ſixteen Points or more of each Hemiſphere; as a Directory Needle doth, when it is Moved violently

lently from North to South, vary each of the Poles therof through the sixteen Points or more of each side of the Compass: but as the *Terrella* or Needle doth not Naturaly so vary in the least maner from the North and South Points, wherin only it resteth, so it is most Absurd to affirm that the whole Magnetical Earth doth so vary, or hath any other Position then exactly North and South: for, as I have before shewed, though the Body of a Magnet may indeed be so varied, and that part which was Northern become Southern, by the Magnetical Virtue removing in it; yet the Magnetical Virtue itself is alway and only Polar, that is, exactly North and South, and cannot be otherwise, for then it should ceas to be Magnetical, which must also be Polar Naturaly: and the Magnetical Virtue of the great Magnet the Earth is Inalterable by any greater Power in Nature, which might remove it, as appears by the Inclinatory Needle, which alway conformably Inclines to the same two Points of the Body of the Earth, which are also the two Poles of the Magnetical Virtue therof. But now I shall prove this Inclinatory Motion of the Earth to be Inconsistent with the Diurnal Motion therof, and therefore Impossible: for it is about its own Center according to the Meridian of its own Body, as the other is also about its own Center according to the *Æquator* of its own Body; which two Motions of the same Body at the same time are Inconsistent, and consequently Impossible. I have already shewed how a Body at the same time may Move about its own *Axis* according to the Parts, and also Progressively according to the Whole; as a Cart-wheel Moveth runing down a hill; or any Planet Moving about its own *Axis*, and also Progressively in the Circle that it describes: and so also the Motion therof about its *Axis* may be one way, as from East to West, and the Progressive Motion the other way, as from West to East; as suppose an undershot Wheel runing down a declive Chanel of Water, which shall also carry it about its own *Axis* one way, while it runs down the other way: and so the handle of a Quern may be Moved Progressively one way, and yet Directed or Inclined about its own *Axis* the other way, or a *Turbo*, or Top, sett up by the Right hand drawing back the *Scutica*, or Slash, wound about it, is turned about its own *Axis* back again from the Left hand to the Right hand; and yet it may be also whip'd Progressively

from

from the Right hand to the Left hand: And the *Satellites* about a principal Planet do describe Hemitrochoids, as I may so term them, whereby it most evidently appears, that they are not, nor can they possibly be so Moved by the Spheres, for it is not only by a Circular, but a Progressive Motion; so as if while by the *Axis* a Quernstone were drawn forward Circularly, by the Handle it should be also Moved round about the *Axis*; the Handle would describe such an Hemitrochoid about the *Axis*. Also I grant that three, or more, several Motions may be in the same Body at the same time, by several Movers: as suppose a Ship sailing round, and describing a Circle Zodiacaly, like the Annual Motion of the Earth; and a Globe Moving in the Ship about its own *Axis* according to the *Æquator* therof, like the Diurnal Motion of the Earth; and a Fly Moving upon the Globe according to the Meridian therof, like the Inclinatory Motion therof; the Fly doth not only so Move upon the Globe, but is also Moved by the Globe according to the Motion therof, and the Globe, and consequently the Fly, by the Ship according to the Motion therof: and so there may be in the same Body at the same time as many several Motions as you please; for the Body doth not Move itself Actively according to all these Motions, but is also Moved Passively by others; which is as great a difference, as there is between Action and Passion, as I have shewed. Now, though I grant, that there may be an Active Motion of the Body itself according to the Parts about its own *Axis*, and according to the Whole Progressively, either in a Direct, or Circular Progression, yet I deny that the same Body at the same time can Actively Move itself any more then these two several ways; as that while it Moves about its Center one way, it can also Move about its Center any other way, or that while it Moves Progressively, according to any Line, Direct, or Circular, one way, it can Move Progressively according to any other Line another way: which plainly is as Impossible, as that the same Body at the same time should be in several Places; for so indeed it must be, either according to the Parts, if it could so Move about its Center, for then the same Part must be in or upon several Points at the same time; or according to the Whole, if it could so Move Progressively; for then the Whole must be in or upon several Lines at the same time: and it may be tried by a round Bullet of Iron

or

or Lead marked with the two Poles, and an *Æquator*, and Meridian, and then place it on a declive Bord on either of the Poles, and it will run round according to the Meridian, from Pole to Pole, by the Gravity therof; but if by the Prepotence of your hand you fett it up like a Top according to the *Æquator*, with one Pole on the Bord, as before, yet it will not run round, as before, according to the Meridian from Pole to Pole, but slide down turning round according to the *Æquator* only upon that one Pole, becaus it cannot Move both ways at the same time, though it doth Move about its *Axis* according to the *Æquator* by the Impressed Motion, and Progressively downward by the Gravity at the same time; but as it cannot then Possibly Move Progressively any other way then downward, or in or upon any other Line at the same time then as it doth then Move: so neither can it Move about its *Axis* any other then one and the same way that it doth Move at the same time. And so, as I have shewed, though there may be supposed a Diurnal Motion of the Earth about its own Center according to the *Æquator*, and an Annual Motion Progressively in the Zodiak or Circle that it describes, yet there cannot also be a third Inclinatory Motion about the Center according to the Meridian; becaus there cannot be two Motions about several *Axes* therof according to the Meridian and *Æquator*, or about the Center of itself, as I said: especialy since the Diurnal Motion of the Earth must be about the *Axis* according to the *Æquator*, and the Inclinatory about the Center according to the Meridian, not only thus severaly, but one Diurnaly, and the other Annualy, as I have said; (whereby it should Move both slower and faster about its own Center at the same time, which is Impossible, otherwise then by an Epicyclicous Motion, as I shewed in a Quern) and that this is an *Amechanon*, I appeal to any Mechanike, or to any who shall Mechanicaly try, to make a Terrestrial Globe so to Move the three several supposed ways, or indeed any two several ways about any two several *Axes* of its own Body at the same time (as certeinly none can Move by two several Progressive Motions at the same time) without several Movers, as is aforesaid: so that though all the Relative *Phænomena* of Æther or Earth may be solved by the Motion of either of them, yet the three supposed Motions of the Earth itself cannot be solved: wheras the Motion of the Sun about his *Axis*, and also Progres-

sively in the Zodiak Annualy, and his being Moved and carried about Diurnaly by the Æther, which is another Mover; and so of *Venus* and *Mercury* Moving about him, as any other *Satellites* about other Planets, Progressively, and being also Moved and carried about Diurnaly with him by the Æther, are easily solved *Primo Intuitu*, and according to the plainnes and facility of Nature, without such Inconceivable, and Impossible, Inclining, and Distorting of the Earth or their Brains, as others have vainly done, and can never approve, unless they also find out some other Mover to carry about the Earth, as the Æther doth the Sun; which certeinly may not be the Æther, becaus they affirm it to be Immovable; nor the Air, nor Water, which have no such Diurnal Motions themselvs. Wherefore though Scripture, and the Verdict of all Mankind generaly besides themselvs, were sufficient to turn the Balance and determin against such an *Hypothesis*, wherof they can never be satisfied, that it is so, but only suppose that it may be so; yet consydering that I have to deal with such Empirical Philosophers, who make Sens alone to be both their Text and Topikes, I have doubly and thus largely proved it against them that it is not, nor cannot be so; and though this last Ratiocination be also a Sensation, or a Mathematical and Mechanical Demonstration, yet I shall add one Sensible Experiment more, which is agreed by all, and that is the Motion of the Sun about its own *Axis* by his own Planetary Power; whereby it plainly appears to be Actively Motive in itself, and as a Wheel that may be Moved round by another Passively, may by the same Passive Motion be also Moved Progressively, (and so all Coaches and Carts are Moved or drawn by Beasts) so the Sun may, and doth, by the same Planetary Virtue, whereby he Moveth himself about his *Axis*, Move also Progressively in the Zodiak (though not in like maner, or by such proportionable Circumvolutions) by his own Motive Power, which apparently he hath in himself: and so the Moon also Moveth about the Earth, and the *Satellites* about a principal Planet, and other Planets about the Sun; which plainly shews that these *Ætheruli* are Motive, and so indeed are all the rest, and Æther itself; wheras Magnets, or *Terrellæ*, as I have shewed, though they have Verticity, yet cannot thereby Move once round about their Center, nor at all about their Magnetical *Axes*; and though they have a Magnetical Concursion, yet one of them cannot

cannot thereby Move once round about the other, by the Magnetical Virtue of one or both of them. Wherefore the Earth is only a Magner, which cannot Move round by its own Magnetical Virtue, and the Æther, and *Ætheruli*, Planets, which do so Move round by such several Motions perpetualy : and therefore we ought to ascribe these Motions to Æther, and not to Earth ; becaus the Motion of either may solv the *Phænomena* ; and most Sensibly and confessedly the *Ætheruli* are so Motive, and the *Terrellæ* are not ; and so the Motion of the Æther and *Ætheruli* doth sufficiently solv them without any Motion of the Earth : and wheras others would therefore ascribe Motion to the Earth, becaus the Motion of that alone may suffice without the several Motions of all the Æther, and so many *Ætheruli*, they plainly contradict the Text (which saith, *God sett them in the Firmanent of Heaven to give Light upon the Earth*, (that is, that both the Firmament of Heaven, and all the Luminarys therin, thus by Moving about this one Terraqueous Globe, might give Light upon it by their Rays passing through the Diaphanous Air unto it, as so many Lines from the Circumference to the Center) and also the Reason of their very Nature, which is most Motive of all the Elementary Bodys, and likewise Sens itself, which discovers them to be Mobile. Others suppose the Earth should be more Mobile, becaus it is less then most of the Luminarys, (which I believ was the first occasion of this Error) but they consyder not also, that it hath the least Motive Virtue, which in the Æthereal Bodys is more proportionable to their Bulk ; and so the Sun is fitly compared to a *Strong man*, or Giant, *runing his Race*, which he can do more swiftly then the Dull and Dwarfish Earth. But their grand Argument, and that which they esteem their most beautifull *Helena*, (though it be as falsi and adulterine) is the Orderly and Circumferential Situation of the Planets in their Spheres about the Sun as the Center ; wherof they make the Earth to be one : but heer again the Moon doth break the *Chorus* ; becaus she Moves about the Earth, and not about the Sun, as the rest, and so the Sun with them also about the Earth ; and therefore it is said, that God made these two great Lights, to rule the Day and Night upon the Earth (as they principaly so Move about the Earth, and all others about the Sun) and they ; and all the others, were sett by him in such Positions, and to run such Courses, whereby they might be most

ſerviceable to the Earth: nor are there any ſuch ſeveral Spheres in the Æther, as I have ſhewed; but the true Spheres of the Elementary Globe are moſt Orderly and Circumferentialy ſituated about the Terraqueous Globe, as the Center of them all; without any Eccentricitys, Epicyclicitys, Hemitrochoids, or the like: and ſo the Air doth encompaſs it, and the Æther the Air, and the Superæther the Æther: and thus Spheres properly and moſt conformably relate to their inmoſt Orb, and not all, or any one Orb in the Æther to the Orb of the Earth: for ſo one Orb doth not relate unto another, nor can Convex Orbs ſo comply, as Concave Spheres, with any Orb; nor can they otherwiſe be Centers either of Gravity, or Extenſion, one to another; becauſ there can be but one Center to which all *Gravia* do tend, as I have ſhewed; and Orbs applied one to another make the greateſt Chaſms between them in their Extenſion. And thus there is the greateſt Conformity both of the Situation of the Elementary Bodys, according to their more or leſs Denſity, downward; and of the Elementary Spirits therin, according to their more or leſs Activity, upward; wheras if the Sun ſhould be ſuppoſed to be, or have, the Center of the World in himſelf, he muſt alſo be ſuppoſed to be the moſt Denſ and Dull of all Elementary Bodys, who is the moſt Glorious and Active of all Elementary Operators: and as he, and the Moon, ſo alſo all the Starrs, were made to divide the Day from the Night, and to be for Signs, and for Seaſons, and for Days, and for Years, which is accordingly performed by their due and determinate Situations; which however they may appear unto us, yet by their very various Poſitions, yea their Eccentricitys, and the like, they do ſo produce thoſe varietys of Seaſons, and their *Annos Saturni, Jovis*, and others; and obſerv ſuch Orderly Courſes, as if we did rightly underſtand them, we ſhould eaſily conceiv, and confeſs, that it would be a great Monſtroſity in any of them to be placed otherwiſe. Thus the Sun, who doth chiefly excell, and exceed, all the others in the two principal Æthereal Qualitys, Heat, and Light, is ſeated at ſuch a diſtance, as doth beſt afford to the Terraqueous Globe a fitt Temperature therof, and doth Move and is Moved in ſuch Courſes, whereby, though he be but one Luminary, yet his Heat is ſo diſtributed and communicated to all the Globe, that there is no Zone Inhabitable, as was antiently ſuppoſed; and ſo alſo his

Light

Light in all the Parallels therof, that in the whole Year, though not every Day, one hath as much of his Principal Light as another; and they which are fartheſt from the *Æquator*, and neerer to the Pole, are alſo recompenſed with more of his Secondary Light, and have longer *Crepuſcula*.

III. *God made two great Lights, the greater Light to rule the Day, and the leſſer Light to rule the Night:* that is, the Sun to rule the Day, and the Moon to rule the Night: and wheras they are ſaid to be great Lights, that is no ſuch Popular Expreſſion as ſome would have it; for as it is ſaid, ſo indeed they are great Poſitively, though not greater Comparatively then all the others, or ſo as the Sun is ſaid to be greater then the Moon, nor are they termed great Starrs, but great Lights, or Luminarys; and ſo indeed they are greater then any others: and this is the very ſenſ and meaning of the Expreſſion, according to the Subject Matter, which is immediately ſubjoined, *the greater Light to rule the Day, and the leſſer Light to Rule the Night:* and as they were all made to give Light upon the Earth, ſo certeinly theſe two give moſt Light upon it, the Sun by Day, and the Moon by Night; and to ſtop the mouths of all ſuch Cavillers, it is Originaly, not the Greater and Leſſer Lights, but the Great Light and the Litle Light; and ſo indeed they are: and as they are ſpecialy named, ſo their ſpecial differences from the reſt are very conſyderable; not only of the Sun, which are ſufficiently noted and acknowledged, but alſo of the Moon; as her not Moving about her *Axis*, her Epicyclicitys, *Apogæa*, and the like: and though the Sun is the Illuminator of them all, yet he ruleth Day alone by his own Diurnal Light; wheras the Starrs attend and aſſiſt the Moon in their Courſes and Orders while ſhe ruleth the Night by the Conjunction of their Nocturnal Light: but that which is moſt notable, is her Moving ſo often Immediately and only about the Earth, and never about the Sun alſo, like others; and it being the very End of the Creation of all the Luminarys to give Light upon the Earth, this ſhews her to be another Principal Planet in that reſpect, which is the chief End of them all, as well as the Sun; and ſo indeed the Sun and Moon do cauſ more Variations, and greater Effects in the Earth, then all the Planets and Starrs beſides; yet as I deny the Earth to be a Planet, ſo I do not conceiv that the Moon is any

more a *Satelles*, or *Appendix*, of the Earth, then the Sun; though she doth Move about it, as the *Satellites* seem to do about their principal Planets; which is not by any Magnetical Emanations of the principal Planets so carrying them abou', but by their own Planetary Virtues so Moving themselvs; nor do they Realy Move about them Circularly as they should, if they were so Moved by them, but by such Hemitrochoids which they describe, as I have shewed, while the principal Planet Moves in a Line cutting the Perpendicular therof in the midst between the *Basis* and the *Zenith*; whereby they are sometimes below them, and sometimes above them, and sometimes on the one side, and sometimes on the other, and so may seem to Move Circularly: which is no Magnetical Motion, as I shall now shew; and yet they who can solv the *Phænomena* by affirming whatsoever they pleas, will join not only three Elements, which are the very true and real Dividers and Sharers of the whole Elementary Globe, according to their very different Natures, Spirits, and Spiritual Qualitys, and also more or less Densitys of their several Bodys, (which are farr more evident and consyderable Distinctions and Heterogeneitys then any greater or less Quantity of Matter, which as such is always Homogeneous) but also the Moon itself, which is a consydera'le part of the fourth Element, Æther, into one Magnetical Correspondence and Combination: Wherefore, as I have proved that the Earth is no Planet, or Moon; so I will now also prove that the Moon is no Magnet, or Earth: and this I hope may also serv to disprove any such supposition of any of the other Planets, which are of the same Æthereal nature with the Moon, and as different from the Earth. Certeinly we thus read that the Earth and all the Elements were made and perfected before any Planets or Starrs; which afterward in this Fourth Day were made to give Light upon the Earth, and not the Earth upon them, or any of them; and God placed them all in their several Positions about their Centrical Orb, the Earth, and the other Elementary Spheres about it, before there were any Positions or Motions of the Planets; and he made Dry Land and Seas in the Terraqueous Globe, but not in the Moon, or any of them; and so the Earth, and Waters, and not they, brought forth Grass, Herbs, and Fishes, and Fowls, and Beasts. And though Superæther, and Angels, be farther removed from us then the Æther, and *Ætherali*; yet we have

have some Conusance of them, and some Communion with them, declared in Scripture; but not of any Inhabitants, or such other things in the Moon, or any other Planets: so that if we will yet oppose *Ipse Dixit* to *Deus Creavit*, we must say, that not God, but Man, made this World in the Moon: and they who can so Create in it Earth, and Seas, ought also to make therin Vegetatives, yea Sensitive, and Intellective Inhabitants: for since we heer on Earth, where God hath founded his Troop, and made his Plantation both of Vegetatives, and *Animals*, have no Use nor Inspection therof, it must conformably have its own proper Inhabitants to use and enjoy it, otherwise it should be so made in vain. Again, the Moon cannot be any such Magnet as the Earth, which appears plainly by her Motions so often about the Earth, without Moving once about her own *Axis*, for such are not Magnetical, nor in any respect like unto the Motion of any *Terrella* about the Earth, or Needle about a *Terrella*, which maketh two Revolutions about its own *Axis*, while it Moveth once round about the other, (like one Wheel with Teeth so Moving about another) whereby also the South Pole therof doth alway comply with the Noth Pole of the other, and the North Pole with the South Pole of the other, and so all the other Intermediate Points: and if we say that the Moon hath any other Magnetical Virtue different from that of the Earth, which doth so regulate her own Motions, I grant that both the Moon and all the others, have such proper Specifical Virtues, as I have shewed, and which I Genericaly call Planetary; and though others may more Genericaly call them all Magnetical, yet I must affirm them Subalternately to differ, as I have said, and shewed that the Poles, *Axis*, and *Æquator*, of Æther do from them in the Earth, though they be both so Denominated Equivocaly. Also it is Sensibly evident that the Moon is not an Earth, nor the Earth a Moon; becaus the Moon is Luminous, but the Earth Opacous, though very much Illustrated by the Sun; which becaus it is denied, and will also concern all the other Starrs, therefore I more willingly undertake to prove it; though it be only a Superfœtation of the former Error. It is expresly said, that *God made two great Lights*, that is, the Sun, and the Moon: wherefore the Moon is a Light or Luminary as well as the Sun; and greater or less Light doth not deny, but affirm, the less to be a Light as well as the greater:

and

and so they are both termed Synonymously and Univocaly *Luminaria*; and not the Sun *Luminare*, and the Moon *Speculare*, as some men would make her to be: and so it is said generaly of them and of all the other Planets, and Starrs, *Let there be Lights in the Firmament of Heaven*; and so indeed is the whole Æther both Calid and Luminous, though yet less then the Moon or Starrs, becaus Heat and Light are the common Æthereal Qualitys, though there may be farr more in one Æthereal Body then another, becaus their *Composita* are Specificaly different; but as they are all more Genericaly Æthereal, so they must all have their Generical Qualitys, without which they should not be Genericaly what they are; as well as all Vegetatives, and Sensitives, though they differ Specificaly one from another in their Simple Substances, and so have their Specificaly different Spirits, and Spiritual Qualitys, yet must also have such as are Genericaly Vegetative and Sensitive; otherwise they should not be what they are, Vegetatives, or Sensitives: and thus indeed they make the Moon to be a *Terrella*, and not Æthereal; which they may as well affirm of the Sun, and all the *Ætherali*, and Æther itself, and so make it to be no Æther. And wheras we Sensibly see the Moon to shine, the Question is, whether she shine by her own Light, or only by the Solar Rays Reflected from the Earth, whereby the Earth should give Light upon her? which I have before refuted: nor can it be so according to Optike Law, if we consyder the very great distance between the Earth and Moon: for though Direct Rays pass from the Center Circumferentialy to the utmost Sphere of their Activity, as the Solar Rays so Illuminate the Earth, and the whole opposite Hemisphere; yet Reflex Rays are much shorter, though very Vivid and quick, becaus they are so Reduplicated and Conspissated, like the Horns of a Snail when they are touched; and they are proportionably stronger as they are neerer to the Reflecting Angle or Point; as we see a Candle much farther by the Direct Rays then any Object Illuminated thereby by the Reflex Rays therof, and the neerer we are to the Object, we see it better. And so, though it is said, that the Pike of *Teneriff* may be seen at the distance of two or three Degrees (as any Eminences of the Earth may be seen so farr as a Line drawn from the Summit therof will be Tangent upon the Globe of the Earth, and perhaps somwhat farther by

by the advantage of Refraction, which may ſuffice to render an Object Viſible about ſuch a diſtance as three Degrees); yet at the firſt Degree it will be ſeen very Dull and Obtuſe; and much more at the Second; and he that can ſee it at the third, *Aut videt, aut vidiſſe putat*, —— though he look upon it at Sunriſing or ſetting, when the Rays are moſt Directly Reflected, or with a Teleſcope, (which doth Magnify rather then Prolong the Reflected Rays); or though the Object be of the greateſt Magnitude, as the *Alps*, or *Apennine*, or Rock of *Lisbon*, and the like; which yet will never be ſeen very Lucid or Colorate, but Confuſed like a Cloud, or Fume; (yea, though it be Specular) at ſo great a diſtance: wheras plainly we ſee the *Moon walking in Brightnes*, as it is ſaid of her, with our naked Ey, yea, her very Figure and Spotts. Nor is it only by Reflection of the Solar Rays from the Moon herſelf, though that be neerer to the Truth, being only by a ſingle Reflection, wheras the other muſt be double, firſt from the Earth to the Moon, and then from the Moon back again to us on the Earth; wherefore to find out the Myſtery of ſo clear a *Phænomenon*, we muſt conſyder the Moon in her own Native Light, which is ſo great in herſelf, that thereby ſhe is alſo Viſible unto us, in an Eclipſ, in her whole Disk, and that part of her Disk, which is not Illuſtrated by the Sun, is Viſible ſometimes, or with ſome advantages: and wheras this Viſibility is imputed to the Secondary Light of the Sun, I have ſhewed that an Object cannot be ſo farr ſeen by his Principal Light Reflected, and much leſs by any Secondary Light. Wherefore certeinly ſhe hath ſome Light in herſelf, and ſuch as is farr greater then the common Light of Æther; becauſ ſhe may be ſo ſeen thereby in the Æther; and yet this Light is farr leſs Lucid or Viſible then when and where ſhe is Illuſtrated by the Principal Solar Light: which to explain, we muſt conſyder, that ſhe alſo is Æthereal and Connatural with the Sun; and ſo was made one of thoſe Luminarys, which were Created in the Firmament of Heaven, and ſett there to give Light upon the Earth, not only generaly, as all the reſt of the vulgar Starrs, but more ſpecialy and principaly, as ſhe is ſo called *the Queen of Heaven:* and ſo we muſt conceiv that they all had not only their own Native Light produced in themſelvs, but alſo adapted ſo as to Colluminate together, and give Light upon the Earth, as it is ſo ſaid of them all together,

as well as particularly of the Sun, to rule the Day, and of the Moon to rule the Night: and thus they were made one general Constellation, or Host of Heaven, wherof the Sun, who was made to rule the Day (which is called Light, and in respect wherof the Night and all the Nocturnal Light is Comparatively termed D.rknes, not only as they were so Divided and Denominated in the First Day, before there were any Moon or Starrs to rule the Night, but now also again in this Fourth Day, wherin the Luminarys were made *to rule over the Day, and over the Night, and to divide the Light from the Darknes*) was made also to be Fountain of Light, generaly as the Ocean, and the rest as Rivers or Streams of Light; and as all the Luminarys, and Constellations, have their Influences, so every other Planet, and Starr, and the whole Æther, had their own Native Light more or less Actualy produced in themselvs; and likewise an aptitude or Potentiality of production of a greater Lucidity and Emanation therof, as well as of their Influences, by the Sun, whereby they also might give Light upon the Earth. And thus, as I have observed, Univocal Generators do most Effectualy Generate and produce, as Heat is so said to draw forth Heat; and particularly Colors, which are composed, as I said, of Lucidity and Opacity, though they be Inherent in the Colorate Bodys, wherin they are so Mist, and do Subsist; yet being so Mist with Opacity, their Lucidity is thereby also so Imprisoned or fixed and confined to the Colorate Body, that it is only Actualy Inherent therin, and cannot issue forth in Emanant Rays, whereby it becomes Visible unto us, until it be Evoked, Excited, and Assisted, by the External Light: and the more Lucid the Color is, as White, and the like, the more it is so produced; as Whites are best Marks at a distance, and a White Horse a better Mark or Guide in a dark Night then a Black; and the more Light or Rays therof are cast upon any Colorate Object, the more are the Visible *Species* therof produced; wheras Culinary Lucid Bodys, which of themselvs do Emitt their own Rays, are not Assisted, but rather have their Visibility Obscured by External Light; especialy if it be greater; as a Candle in the Sun, and so the Starrs and Moon itself above the *Horizon* before Sun rising, or setting, are not so Visible as afterward, as Water doth quench the flame of an Haystack, which it before Incensed. Wherefore I thus conceiv,

conceiv, that the Native Light of the Moon, being not a Culinary, but an Æthereal Light, Inherent in the Moon itself, is like Color, yet farr more Lucid, and so farr more Evoked, Excited, and Assisted, by the Solar Light; as a White Color is thereby rendred more Visible then Black: and that the Inherent Light of the Moon, and External Light of the Sun so concurring by their more Connatural Homogeneitys, do produce and draw forth themselvs together to so great a distance, and with so great a Splendor; and though the Sun doth so produce the Inherent Light of the Moon Positively by his Principal Rays, when they are both above the *Horizon*, yet the Moon doth not then appear so Visible and Splendid, becaus Comparatively she is thereby made farr less Visible and Splendid then he is in himself: for certeinly this Lucidity cannot be only from Reflection of the Solar Rays, whether we suppose the Moon to be Cortical, having Earth and Seas, like the Terraqueous Globe, which Sensibly doth not Reflect very farr; or specular, which may Reflect farther, becaus the Rays penetrate less and more Splendidly, in a fitt Position to the Ey, being Reflected thereby more equaly; but it must be also by some Inherent Light which is in the Moon itself, that is so Collustrated by the Solar Light, and by the Connatural Quality therof: nor is it to be Imagined that the highest Planets, and Starrs which are at the fartheſt distance, and yet Emitt such a Splendid and Vivid Light, should so shine only by the Reflection of the Solar Light. Now, though there are Spotts in the midle, and seeming *Gibbi* in the Circumference of the Moon, (which I rather conceiv so to appear by such Intervenient Spotts therin) yet this may not be from any Concavitys in the Body of the Moon, and the unequal Reflection of the Solar Light thereby; for there are Spotts also in the Sun, whereby his conversion about his *Axis* is noted, and yet he shines by his own Light: but I suppose them to be only less Luminous parts, and such defects of their Native and Inherent Light, as I doubt much, whether they were so Created in this Fourth Day: and though Earth which is a Consistent Body may have such Constant Eminences, and Water some Temporary Waves, yet it hath been observed that as Flame of a Candle, which is somwhat more Rare, is rendred Pyramidal by Compression of the Ambient Air, so if it be defended by another Intermediate Flame, as of Spirit of

Wine Inflamed, or the like, it will Conglobate within that Flame. And wheras *Saturn* is commonly represented Oval, it is said by a very curious Inspector, that indeed he appears so if you behold him through a less Telescope, but if through a larger, you may discern two litle *Atheruli* on each side of him, and very neerly distant from him, which make him so to appear when they are beheld together with him Confusedly and Indistinctly. Though I shall not determine this, or how they might be Composed and Constituted by the Divine Creator: certeinly all the Planets do not Move in exact Circles, but some of them describe Circles Indented with such Hemitrochoids, as I have shewed: but it shall suffice to have proved that the Moon, and consequently the Starrs have their own Inherent Light as well as the Sun, though perhaps not Emanant without his Collustration; and so plainly they have their several Influences, and every one its own Planetary Virtue Inherent in themselvs, which Moves their own Bodys, becaus there are such various and several Motions therof, which therefore must be caused by various and several Motive Virtues. The Moon, as I have said, doth not Move about her own *Axis*, but she doth Move very notably and rapidly in her Zodiak Progressively; and, if we compute that Motion according to all her Revolutions, perhaps as fast as the Sun; which are the two swifteſt Movers Progressively. And the Moon, as she is neereſt to us, so probably she is leaſt Calid and Lucid; wherefore her chief Influence is observed to be over Moisture; not that she is Moist in herself, which is a Quality of Water; but as the Sun doth by his Heat draw up Vapors, and also Desiccate or Concremate them, whereby they do not presently return again into Water, but turn into Dry Exhalations, Clouds, and Motes, wheras more Moist Vapors and Mists commonly rise when the Sun is sett, and in the colder Night; so the Moon by a more Moderate and Insensible *Tepor* doth draw up more gross Vapors, which presently return into Dews and Water, and chiefly when she is in her *Apogæa*, (as I have said formerly of Tides which are then highest) whereby the Vapors are not drawn up so high, but the Water (which, as I have observed, doth Naturaly Evaporate, and again return to Water) by her less Heat is less Desiccated and Suspended; and so the Vapors are lower, and sooner return into Water again: for though Internal Heat in the Water itself

itself, by Rarefying it, doth help Evaporation, yet any greater External Heat doth reduce the Moisture of the Vapors which it raiseth to Potentiality in Fume, which is prevented by the less Heat of the Moon; and by this, or some other way unknown to us, the Moon doth very notably Predominate over Moisture; And thus, as Heat and Moisture are the chief Instruments in Elementary Generations, wherin Cold serveth to temper Heat, and Drines to fix Moisture, so these two chief Luminarys do most notably Predominate over them, that is, the Sun over Hear, and the Moon over Moisture, as well as the Sun doth rule the Day, and the Moon the Night.

IV. Besides these two there are five other Principal Planets, as they are termed, to distinguish them from the other Starrs, which are contrarily termed Fixed; though heer they are all comprehended under the common Name of Starrs, and so indeed they are in Nature; though men taking more notice of the Planets, as neerest to us, and most sensible by us, have formerly Deified them, and still dote upon them, and so have assigned them their several Spheres, and only one Eighth Sphere for all the rest, which are Innumerably more; and yet among the Planets themselvs there are found out some *Satellites*, and perhaps more may be found out heerafter, though we know them not yet, as others before us did not know these: and wheras men also have fansied such several Regions of Æthereal Spheres as are not to be found in Nature, so also such an Orderly and Uniform Position of the *Atheruli* therin, as is indeed contrary to the very End and Intention of these Luminarys, which, as I have shewed, was for the greatest Variety of Seasons and Influences, and that could not be without their various Positions and Motions; which I do rather suppose to be so very various and difform, that like the Motions of Fish, Fowl, and Beasts, not any one of them is like to any other, but every one most Regular in its kind, as I have observed of Mathematical Figures, that is, the Circle, and all Regular Polygons, which therefore are Asymmetrous; and so are the *Ætheruli*, becaus they are all several Specifical Natures, purposely Created to expres such Varietys, and Conform in their very Difformitys. Certeinly their Positions are all very different and distant,

according to which the ſeveral Imaginary Spheres have been Invented, (and they might have Invented many more, as ſome have done) and their Courſes are like a *Chorus* of ſeveral Dances; and though I do not think with *Pythagoras*, that they produce any Harmonious Notes or Numbers, yet they are according to ſome Symmetrical Meaſures among themſelvs, though unknown unto us; as all things which are moſt Admirable in themſelvs, are leaſt Intelligible by us. And ſuch alſo are their Motions; for ſo the common Æther only Moves about the Inferior Globe, as its Center; becauſ that or any other Imaginary Sphere therin cannot Move otherwiſe, unleſs it ſhould Remove out of its own Elementary Place and Poſition; but the Moon doth only Move Progreſſively, and not about her *Axis*; and her Progreſſion is with ſo many repeated Revolutions, Eccentricitys, Epicyclicitys, *Apogæa*, and *Phaſes*, that none hath greater Variety in the whole, and yet ſhe is moſt Conſtant in her Inconſtancy: *Venus*, and *Mercury*, Move about the Sun, and the upper Planets about the Sun and Earth, and the fixed Starrs, though ſo termed from their ſuppoſed Fixation and Immobility, yet are found to Move Progreſſively, though more ſlowly; which I conceiv is recompenſed with a moſt quick Motion about their *Axes*, and that this is the very cauſ of their ſcintillation, proceeding from the quick Conſecutions of the Solar Rays which Colluſtrate them, and which the Ey cannot ſo quickly behold, as it may the Rays of Planets, which Move not ſo nimbly about their *Axes*: for ſo if there be any ſuch variation of the Radiant Object, as in the Undulation of Water when the Sun ſhines; or of the Organ, as if you walk by a Glaſs window Reflecting the Direct Rays of the Sun riſing or ſetting; or of the *Medium*, wherin Vaporous Fumes may cauſ various Refractions; there will ſeem to be ſuch a Twinkling or Trepidation of the Light. And according to their ſeveral Poſitions and Motions ſo there are ſeveral Illuſtrations of them by the Sun; whereby ſometimes they appear, and ſometimes diſappear; as *Mercury*, and others; and ſometimes one part of their Bodys appear, and ſometimes diſappear; as the Moon: and they have ſeveral *Phaſes*, as ſhe, *Venus*, and *Mercury*, which are below the Sun; whoſe half Disk is yet always Illuſtrated in themſelvs, and ſo appears in one part of the Earth or other; but alway variouſly in any ſeveral parts therof; and others which are above the Sun

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have their Disks every where appearing Lucid: And there are not only very various Oppositions and Conjunctions, and many other Vicissitudes, which are continualy altered by their Motions; but certein Fixed Constellations, as I have shewed; wherof there are more notable Influences, (as it is expressed of *Pleiades*) becaus, as they have all some Influential Qualitys, so by their Combinations and Colluminations (as they are therefore also called the Bonds of *Orion*) they do mingle and Contemper them, and so Cooperate together. And yet they are all one Host which is so Collustrated by the Sun: and that is a very great Host, and Innumerable to us; which, though the Antients generaly confined within Six Magnitudes, and Moderns can particularly tell the Number of them all not very much exceeding one thousand; that is, as I suppose, of so many as they are able to Discern and Number, yet indeed God only can tell the Number of the Starrs: and so he saith to *Abraham*, who was esteemed no mean Astronomer, *Look toward Heaven, and tell the Starrs, if thou be able to Number them*, and *Moses* to the *Israelites*, *Ye are this Day as the Starrs of the Heaven for Multitude*, and though the Tribe of *Levi* was not then Numbred, their whole Host was 603550, besides Women and Children; and in *David*'s reign 1300000, also besides Women and Children: and so certeinly we cannot determine the Number of this Heavenly Host, that is, also of all those Minute Starrs in the Galaxy, which do not appear distinctly, and others, which do not appear at all, but yet I do not conceiv that their Numbers were Parallel; for the Number of the *Israelites* was Variable, but the Number of the Starrs Invariable; only they are Analogous in this, that as the whole Number of the *Israelites* was never known, becaus the less sort of People, that is, Women and Children, never were Numbred, so the less sort of Starrs can never be known, and therefore not Numbred. Now besides these wonderfull Varietys, and all their several Influences, these, Celestial Lights, were purposely made *for Signes, and for Seasons, and for Days, and for Years*; which they distinguish into as many Varietys, and certein Fixed Periods, by their certein and Regular Motions; wherof the Diurnal Cours of the Æther, and Annual of the Sun, are mentioned, as chief; becaus the first doth make Day generaly, and the other particularly: and yet they also are Asymmetrous, and Incommensurable one with the other; and

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the next to them is the Menstrual Motion of the Moon, which maketh Months, and that also is Incommensurable with either of them; according to which, besides the Sabbath Day (which was made for Man, or Mankind generaly; and so Instituted first in Paradise, and is still kept and observed by virtue of that first Command, and only the Circumstance of Time varied, whereby it is exalted from a Rest of Creation to a Rest of Redemption) and also the Annual Feasts, and Jubiles, according to the Motion of the Sun, there were also Monthly Feasts in the New Moons, and the like, according to the Cours of the Moon, appointed by God for the *Jews*. And becaus, as we cannot work according to Mathematical Exactnes, so also we cannot know Astronomical scrupulosity; therefore the Priests were to blow with the Trumpets, as it is said, *In the Day of your gladnes, and in your Solemn Days, and in the Beginings of your Months*, to call the Assemblys, and give notice to the People when they should begin them. And so also there were Weights and Measures of the Sanctuary, or there reposited as Sacred things; as it is said, *A just Weight and Balance are the Lords:* and therefore the Standards therof were kept by the Priests: but certeinly these Measures could not Commensurate that which is Naturaly Incommensurable: and so it is supposed, that wheras it is said of the Lavacre or Brasen Sea, that it was *Ten Cubits from Brim to Brim*, or from Lip to Lip, *round in Compass, and a Line of Thirty Cubits did compass it about*, that it was so not Exactly, but *Rotunde*, according to the common Mechanical Account: which becaus more Curious Mathematicians will not accept; and therupon insult over Scripture; and from this one Expression would prove all others therin to be Popular, and themselvs to be the only Exact men; I shall heer farther examin it; and desire them to reconsyder how it was a Vessel having Brims, or Lips; and so is said to be Ten Cubits from Lip to Lip Inclusively, as *A Capite ad Calcem* is also so rendred Inclusively, — *Talos a Vertice pulcher ad imos:* and the Compass of the Body of the Vessell itself was under the Lips Exclusively; as it followeth, *and under the Brim of it round about Knops compassing it, ten in a Cubit, compassing the Sea round about*: whereby also we may understand what was the particular Breadth of the Brim or Lip; that is, almost a quarter of a Cubit (but never according to Mathematical Exactnes) and therefore the Measure therof

therof is not otherwise particularly mentioned; as it is of the Body, that *the Thicknes of it was an Hands breadth.* But I shall leav these Disquisitions to more learned Criticks, who, if they pleas to understand Scripture, not according to such Maligne, but Benigne Interpretations, shall find therin not only Verity, but the greatest Curiositys couched in the most Mysterious Expressions: and so I profess, and hope to shew through this whole Discours, that when Scripture and Nature are throughly examined and sifted to the utmost, they will be found to be most Concordant, one with another; and all Scripture, as well as Nature, with itself.

V. Though, as I have shewed, there are no new Starrs Created, nor any Annihilated, as some affirm of the *Pleiades*, or Seaven Starrs, as they are commonly called; but as *Ovid* observed of them in his time,

Quæ septem dici, sex tamen esse solent;

so long before him in Scripture they are called only by the Name of their Constellation, and no where Numericaly Seaven, as Translators render them; yet since the Heavens as well as the Earth were cursed for Mans sake, there are also some *Anomala* and Meteors in Æther; and such as are not like the Starr of our Savior, which was made by a Miraculous production; but Monstrous and Prodigious; wherof the Antients make mention, as that which appeared at the death of *Julius Cæsar*, to celebrate his *Exit*, as the other did our Saviors *Intrat*; which was some extraordinary Comet in the Æther, where they denied any Comets to be, and affirmed it Ingenerable and Incorrptible, both in the whole, and in every part therof; wheras now plainly there are found to be in it both *Maculæ*, and Comets: and the *Maculæ* are such Luminous *Flocci* as are either Æthereal *Effluvia* of the Luminarys, or perhaps sometimes *Confluvia* of the Æthereal Matter, and of which, as I suppose, the Comets are Composed, as Aereal Meteors are of Vapors: but there is no mention of any such in the Six Days Works, which were all Good and Perfect; though, as I have shewed, there was in the first Day a *Confluvim* of the Æthereal Light, which was afterward in this Fourth Day divided and formed into the several Luminarys, and which was the Goodnes and Perfection therof. Bnt as all Æther is

Motive and Planetary, and every Luminary therin hath a proper Specifical *Compositum* and Qualitys, as well as it is Generically Æthereal; so I suppose these Redundances and Excrescences therof, being Composed of several parts of them, have accordingly Mist Bodys, and Planetary Qualitys, whereby they perform their odd Motions, and Courses; and when this Meteorical Composition is dissolved, then they disappear and ceas. And there are not only such *Maculæ* contiualy in Æther, which do not alway Conglobate into Comets, but very often less Comets not so much observed by us, or not on Land, as Seamen say they see them at Sea: but such as are greater, and perhaps more Concocted, are by us commonly called Blazing Starrs; which indeed are no true Starrs, but only *Stellæ fatuæ*, (as I may call them, alluding to the like Meteors in the Air, which we call *Ignes fatui*) and yet differing from *Stellæ cadentes* therin, which are so called from their falling again to the Earth; being Composed of Culinary Flame; wheras Comets being Composed of Æthereal Substance, when they are Corrupted, are resolved into it again; and they differ from the true Starrs, in that they are so Composed and Dissolved only by Meteorical Generation and Corruption, and not by any Improper Creation, as the others: and though they also be Illustrated by the Sun, and thereby have a notable Emanant Light, yet they are farr more Dull and Obtuse; so that as the Sun is the Universal Illustrator of all this Spectable World, he doth more or less Illustrate every Spectable thing, as it hath more or less of the Connatural Lucidity in it; and thus the Terreous Opacity, which is contrary to Light, doth Reflect, Refract, and Distend it, as I have formerly shewed; and Black, which hath most Opacity in it, doth ingage the Light in the Encounter, and more detein it thereby; Also though the Solar Rays be not Ingaged, as I said before, in the Opacous Body, nor partly deteined, as in Reflection from the Opacous *Fundus* of a Diaphanous Body, as of a Jewell, Looking-glass, or the like; but may be otherwise Reflected from any Polite Body, as a Steel *Speculum*, or the like; yet they are thereby Retunded, and their Reflection much abated: and the strongest and fartheſt Reflection, or rather Collustration is, as I said before, when the Solar Rays meet with such Lucidity, as is more Æthereal and Connatural unto themselvs: for indeed that is

is not so properly a Reflection or Repulſ, as an Influxion and Concurrence, like a great Stream that falls into the Chanell of a leſs, and so both flow together. Now the Inherent Light of Comets being not only Æthereal, but Meteorical, and more Heterogeneous, the Solar Rays do not so Colluſtrate and Colluminate with it, as with the perfect Luminarys: and this also proves to me that there is such an Inherent Light in all the other *Ætheruli* themselvs, becauſ the Sun doth accordingly Colluſtrate and Colluminate with them proportionably to their own Light in several maners and degrees; as in the Fixed Starrs, in the other Planets leſs, and in the Comets yet leſs; but leaſt with the Inherent Light of Æther itself. And perhaps the Solar Rays are tinged and varied, by being so Miſt with the Stellant in their Emanations, which he cauſeth thereby, and whereby they appear so very different: certeinly the Inherent Light of Starrs is much greater and ſtronger then of Comets, which the Sun partly penetrateth, as he doth a Globule of Glaſs; for a ſtronger Light Inherent doth Terminate and not Tranſmitt the Solar Rays, as we cannot ſee through a greater Flame of Light, as we may partly through a leſs, as through the Flame of Spirit of Wine, or the like; though any other ſuch Light makes Objects to appear very ſtrange and ghaſtly, as the Efflammation of Furnaces, and the like. Now the Solar Rays which are thus Tranſmitted, but not so freely, through the Comet, as through the Æther, by that Offence and Interruption do, as I have ſhewed, Converge, and so go out at the farther *Umbo* more ſharp and compreſt, and then again dilate themselvs, which is their *Cauda*, in the more Rare *Medium* of the Æther, like Compreſt Vapors which so iſſue out of an Æolipile; and they are always in that part which is averſ from the Sun: wheras the Moon, though ſhe hath Spotts, which are leſs Luminous then her other parts, yet doth not Tranſmitt the Solar Rays through them; which ſhews even thoſe Spotts to have more Inherent Light in them then Comets, though they may not ſeem to us so Lucid Compaparatively, in reſpect of her other more Luminous parts. Alſo Comets are Globular as well as any other Luminarys, and they are not only carried about by the Æther as well as Starrs, but have their own Altitudes, and proper Courſes, as they happen to be placed in the Æther in their Generative Compoſition, according to which they alſo Move by their Miſt Planetary Virtue; as God firſt ſett

the Starrs in their Stations and Orders, according to which they perform their Courses by their several Planetary Virtues. And thus indeed according to Statike Law, if any Body Move in another by any stronger Spiritual *Potentia* then the *Pondus* of its Body would cause it to Sink or Swim in the other, it will neither Sink nor Swim, but Move Progressively according to the Moving *Potentia*: as a Man so swims in Water by fitly Moving his Body with a stronger *Potentia* then the *Pondus* of his Body in that *Medium* would cause it to Sink; and so also a Bird flys in the Air: and though I conceiv the Starrs to be Fluid as well as the *Æther*, and *Æther* as well as the other *Expansum* of Air, yet I also acknowledg, that if they were Dens and Terreous Bodys, yet some of them, as the Sun and Moon, and others, might notwithstanding so Move in the Rare Æther, by their very rapid Motions, according to their own several Courses, and so perhaps, not Sink in it: though otherwise, I say, that no Body whatsoever, Magnetical, Planetary, or Sensitive, can Move itself without a Fulciment to keep it from sinking; which Invincibly proves that the Earth cannot so Move, unless, it being most Consistent, Dens, and Heavy, could by any Planetary Virtue in itself be so supposed to Move in the most Rare and Fluid Æther, as that it should not Sink therin, by supposing also such a rapid Motion therof Annualy, as must be admitted according to the Zodiak, and Circle, which it is said to describe, and which according to the *Phænomena* one way or other, must be the same with that wherin the Sun doth Realy Move; whereby that Motion will be found to be, as I said, almost fifty Miles in a Minute; and then unless we can also suppose that the Earth would sink and fall so fast through the Æther in the very first Degree of the Velocity of the Motion of Descent, which must be swifter then the aforesaid Motion, it will not so fall or sink: which to estimate more exactly I leav to the Curious. But wheras Judicial Astrologers pretend to foretell by the Starrs, and especialy by Comets the Fates and Fortunes of Men, yea, their very Imaginations, Affections, and Inclinations, and, which is yet more, Divine Counsels and Intentions, it is certeinly most Unchristian and Intolerable: for Originaly God made the Starrs to be for Signes, and for Seasons, and for Days, and for Years, which is therefore so Emphaticaly repeated; not as Ostents or Portents, wher-

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of there could be no uſe in that State of Perfection, but for Signification and Indication, as well as Cauſation, of Seaſons, Days, and Years, which were certein, conſtant, and orderly, when there were yet no Meteors in Earth, or Air, and much leſs any Changes, Confuſions, and Diſorders, in the Superior Natures; nor did they then portend that greateſt Change, and moſt Dire Event that ever was, or ſhall be in the World, which was the fall of Angels and Men; otherwiſe themſelvs might eaſily have forſeen it: wherefore certeinly they were not firſt Created to ſignify any ſuch Contingencys, but only Natural Futuritys: and now wheras they affirm, that the Starrs do by their Influences govern the Bodily Humors, and by them the Minds and Spirits of Men, let them ſhew us the Experiment of that, which they make to be the Foundation of their Art, and (as it is ſaid of *Thales*) foretell what will be dear next year: wheras their Prognoſtications of any ſuch Contingent things in their yearly Almanaks are generaly as falſ as true; though I grant, as our Savior ſaith, that ſuch who are weatherwiſe may probably foretell what ſhall ſo enſue the next Day, or ſome ſuch ſhort time after: *In the Evening ye ſay it will be fair weather, for the Sky is red; and in the Morning it will be foul weather to day, for the Sky is red and lowring.* Thus alſo they repreſent Eclipſes as very Prodigious things, which yet they know are moſt Natural, otherwiſe they could not ſo foretell them; and if Man had ſtill continued in Paradiſe, they muſt naturaly have been; yea, it were the greater Monſter and Prodigy, if they ſhould not ſo conſtantly happen. And though Comets, which are Extraordinary, may produce Extraordinary Effects, as other Meteors, Thunders, Earthquakes, and the like, and are ſure Signes of what is paſt, that is, the Fall of Man, which hath been the Cauſ and Occaſion therof, and ſo are to be regarded; and may be alſo Extraordinary Oſtents of Gods future Judgments; yet it is alſo as true, that we cannot read this Hand-writing on the Wall of Heaven without a Supernatural Revelation or Indigitation; as the *Magi* were directed by Angels, (of whom it is alſo ſaid they were warned in a Dream) otherwiſe by all their Art they could never have found out the very Town, yea the very Houſ in the Town, yea the very Place in the Houſ where the Child lay, and over which the Starr is ſaid to have ſtood: ſo neither could the moſt Cnrious or Caba-

listical Judgment of any Man have foretold the Retroceſſion of *Hezekiah*'s Sicknes by the Retrogradation of the Sun ten Degrees on the Dial of *Ahaz*: and the Signes in Heaven and Earth at our Saviors Death probably were as Miraculous as the Starr at his Birth; and that Darknes no common Eclipſ of any Luminary, but an Obtenebration of the Æther itſelf over all that Land, as the Earthquake was alſo therin; and all the Signification therof was plainly declared by his preſent Suffering, which made the Centurion cry out, *Truly this was the Son of God!* Wherefore, though I honor Natural Aſtronomy, and only wiſh that it were rectified according to this Divine Rule of Scripture, (as I would alſo gladly be corrected by it in any miſtakes of the Natural *Phænomena*, or any Expreſſions therof) ſo with the Scripture and all Chriſtianity I muſt conclude againſt all ſuch Judicial Aſtrology, as an Heatheniſh Artifice, wherof we are expreſsly forewarned, that we ſhould not be *diſmaied at the Signes of Heaven, for the Heathen are diſmaied at them:* and *Let now the Aſtrologers, the Starrgazers, the Monthly Prognoſticators ſtand up*, and ſhew how they can maintein the Veracity of their Art againſt the Divine Verity. And now I ſhall return again to ſuch Materialiſts, who though they cannot affirm, that becauſ a whole Body is Moved up or down, this way or that way, therefore it ceaſeth to be the ſame, yet can ſuppoſe, that if the parts in the Body be Moved in ſuch a maner, as neither they nor we can diſcern them, there being a new Corporeal Texture, Schematiſm, and Mechaniſm therof, it ſhall therfore acquire a new Individual Spirit and Spiritual Qualitys, by ſuch Local Motion, as it doth by Phyſical Generation and Corruption; which may be beſt Experimented in the vaſt Body of Æther, wherin there are alſo ſo many Orbs continualy Moving ſo many ſeveral ways, and yet they do not therefore ceaſ to be the ſame Æther, and the ſame Orbs, that they were before: and ſo will any other *Compoſitum* be the ſame, though the Parts in it Move this way, or that way, or any way whatſoever, unleſs there be a new Generation to alter it; otherwiſe only the Figure and Situation of the Parts in the Whole will be altered, but not the Phyſical Nature of the Whole, or Parts: and ſo though their *Hypotheſis* be of leſs Corpuſcles, and not of ſuch great Bodys, (which, as they propound the others, becauſ they are Indiſcernibſe, ſo I propound theſe, becauſ they are more diſcernible) for the reaſon will be the ſame

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in these Elementary Natures, though the Parts be never so minute; as every part of Water is Water, though it be never so small, and though it be Moved any way whatsoever: and so suppose the Parts of any one Orb to Move in the Orb, as all the Orbs do in the Æther, they will no more alter the Orb, then the Orbs do the Æther: and if Matter and Motion cannot thus make or alter Elementary Natures, which are Inferior, much less any others that are Superior: and I suppose, that the Superæther is altogether Immovable, both in the Whole, and in all the Parts therof. Wherefore, since this and all the other Heavens are so Stupendous, (that as some suppose, they are therefore so Named) let us not conceiv, that we, or any Angel, could Mechanicaly form those Glorious Bodys by any the most curious Artifice, and much less by our own Imaginations: but acknowledg the Divine Creation, and Original Institution of Æther, and all the Luminarys therin, which have been from this Begining therof, and so shall continue and persevere untill the dissolution of this present Elementary World, Ingenerable and Incorruptible in the Whole, though not in all the Parts therof.

VI. Now let us prais the Father of Lights for all the Luminarys of Heaven, the Sun, and Moon, and Starrs; which the Heathen World formerly adored, and which we ought all to admire, and to adore him who is the Creator therof; whose Glory the Heavens declare, and the Firmament his handiwork: which, though we behold them according to their seeming Aspects, yet we perceiv not their Real Magnitudes, and Altitudes; and much less their wonderfull Motions, and Influences: and though they are but small Portions of one Element, yet are many of them greater then any other, and some of them then all the rest: whose Positions are higher above us then the Center of the Univers is beneath us; and whose Motions are without any Rest, and yet swifter then of any other Bodys, and stronger then of Spontaneous Spirits. And they are all such Locomotive *Automata* in themselvs, and every one Moved by his own proper Power, going on in his own Path, both distant and different from another, but never from itself either in Space, or Time: which are the grand Horologes of Nature, without any Weight, Springe, or *Pendulum*, and yet farr more constant and certein, not only marking and dividing by Lines and Numbers, but

making;

making Day and Night, and all the Seasons in the Year, and such long *Secula* and Revolutions, as probably shall never attein any Natural Period, but be Violently prevented by the Final Conflagration; which shall be effected by their own Æther and Element of Fire, and all these Firebrands therof, who as they were Supernaturaly Generated, so shall also be Supernaturaly Corrupted. And yet while this Elementary Globe doth stand, it is Preserved and Governed by their Progresses and Circuits about the Inferior Orb; who as they pass along scatter the *Missilia* of their various Influences. And though they being a very great Multitude, to us seem to be in a continual Rout, yet every one of them marcheth in his own Rank and File, and they are all severaly distributed into Troops and Partys of Constellations, and the whole Host of them formeth one most Orderly and Powerfull *Militia*, wherof *Sol* is the great General and *Imperator*; who himself alone is able to conquer all the Inferior World, not only by encountring it with his Victorious Presence, which would burn up all before him, but by his very Flight and Absence, which would otherwise destroy them, through their own Indigence and want of his Vital Heat: who as the true *Adonis* brings along with him in his Accesses all the Fruits of the Year, and *Fœtus* of *Animals*, and again carrieth away all that is Annual in his Recesses: who is *Sponsus Naturæ*, *As a Bridegroom coming out of his Chamber, and rejoicing as a strong man to run his Race. His going forth is from the end of the Heaven, and his Circuit to the ends therof. And there is nothing hid from the Heat therof.*

SECTION

SECTION XI.

And God said, Let the Waters bring forth abundantly the Moving Creature that hath Life, and Fowl that may fly above the Earth in the open Firmament of Heaven. And God Created great Whales, and every Living Creature that Moveth, which the Waters brought forth abundantly after their Kind; and every winged Fowl after his Kind. And God saw that it was Good. And God blessed them, saying, Be fruitfull, and multiply, and fill the Waters of the Sea; and let the Fowl multiply on the Earth. And the Evening and the Morning were the Fifth Day.

EXPLICATION.

God having prepared the Elements, Vegetatives, and Æthereal Luminarys, in order to the production, and for the use and service of Sensitives, did then cause the Waters to bring forth Fishes, whose Spirits were before latent in them, according to their several Kinds; and particularly Whales, the greatest of all *Animals*: and so also caused flying Fowls, according to their several Kinds, to be produced. And this was their Specifical Goodnes and Perfection. And after God had thus made them

Good and Perfect in themselvs, he added the Blessing of Procreation, whereby Fishes should multiply in the Waters, and Fowls on the Earth, according to their Kinds. And these were the Works of the Fifth Day.

ILLUSTRATION.

1. *Of Fishes and Fowls.* 2. *Of Sensation.* 3. *Of the five Senses.* 4. *Of Imagination.* 5. *Of Appetite.* 6. *Of the Goodnes of the Works of the Fifth Day.*

I. WE now ascend into the Region of Life, which is not only above all Elementary and Vegetative Nature, but also so farr different from them as the same Living *Animal* is from its own Dead Carcass: and though I have termed them all generaly Spirits, whereby I intend only Substantial Activitys, though they do not breath and Live, as Sensitives, and the Soul of Man, which therefore, to distinguish from others, I shall only call Souls or *Psycha*, and so Hebraicaly they only are termed Living Spirits or Souls: though as the Poets termed Water, Stone, Turf, and the like Vive, so both they and Philosophers conceived that Vegetatives did indeed Live; as appears by their Fabulous Transmigrations of *Animals* into Flowers, and Trees, and their *Anima Vegetativa*; wheras Scripture thus speaketh only Metaphoricaly, when it menioneth Living Water, Stone, Bread, and the like; or that Trees and Corn Dy: and I shall never differ about Terms, but only contend, that Elementary or Vegetative Spirits are also Substantial Spirits, (which Expression they, who also call them Vive, may very well allow) but I also affirm, that they do not Live as these Living Spirits; nor have any Perception or Appetite (which is properly and truly Life, as I shall shew heerafter) to defend my self and all my Expressions from the Opinion of them, who either affirm both Vegetatives and Elements, yea, Matter itself, to be Sensitive; becaus they have such Affections, Inclinations, and Principles Created together with their Substances, and Imprinted in them by God, according to which they Act and Operate, and produce such Effects Naturaly, as Sensitives do Ingeniously, Spontaneously, and Artificialy,

Artificialy; with Perception and Appetite, Knowing, Affecting, and Intending, what they do, which those Inferior Natures do not, nor cannot, becaus they have no such Perception, nor Appetite properly and truly, though Metaphoricaly they are also ascribed unto them in respect to such Effects: and also of others who, becaus these Inferior Natures have not any such Perception or Appetite, therefore deny them to have any such Natural Principles so Created or Imprinted in them, whereby, according to their several Natures thus Originaly Instituted and sett in order, they proceed to Act; and conceiv that only the Spirit of God Immediately doth still Move on them all, as on the first *Chaos*; and so by Matter and Motion only doth Generate and Corrupt all such Inferior things; which he did first Institute and sett in order in the fower first Days, and all their Original Generations and Corruptions, as well as the others in the two last Days: otherwise all the Works of those former Days, which were also in preparation to the latter, had been vain and supervacaneous; which I have sufficiently refuted; and shall now proceed to discourse of Sensitives, which indeed are farr more Noble Natures, and as I said, so much Superior to the other, that heer God is said again to Create, in giving Life, or causing that, which though it was the same Spirit in itself latent in the *Chaos*, and had Potentialy Life in itself, yet did not before Live. Now to Live Actualy; and thus to rais from Death to Life is a most Miraculous Work, and most like to a Proper Creation, not only in the suddennes therof, as Incension, (for certeinly nothing can Live, and not Live in the same Instant) but in the Excellency therof, whereby the *Animal* is as it were raised up from the Grave, and out of that dead Sleep, wherin the Body or Carcas of all the Inferior Natures, wherof it is Constituted, did before ly. And this is Eminently spoken of Whales the greatest of all such *Animals*, though of the lowest Kind therof, that is, of Fishes: for as in the same Vegetative *Classis* there are three general Kinds mentioned, Grass, Herbs, and Trees; so also in this *Classis* of Sensitives, Fishes, Fowls, and Beasts. And as the Elementary Bodys of Sensitives are farr more Organical then of Vegetatives, as fitt Instruments of their more Operative Spirits, so also their very Vegetative Spirits, which in their Compositions are Subordinate unto them, are more Excellent, and have a more Curious

Nutrition and Augmentation, and most notably another maner of Generation: for wheras it is said of Vegetatives, *Cujus Semen seipsum seminet*, heer is added a special Blessing of Procreation to Sensitives; and Perfect *Animals*, such as God Created, do not grow out of the Water, nor out of the Earth, as some Vegetatives; nor only by Putrefaction, and the like, as many Anomalous Sensitives; but are Generated by Conjunct Procreation: and they are made of two several Sexes; as is expressed of all such as entred into *Noah*'s Ark, that they were Male and Female: and therefore a *Phœnix*, which is only of one Sex, is such as was not to be found there, and indeed only a Poetical Creature; and the Male and Female Piony made such only by the Gardiners Fansy: for certeinly they do not propagate by any Conjunct Procreation. But the Sensitive Spirit itself, and the Living Powers therof, are farr above any Vegetative Spirit, or the Facultys therof. For as the Matter is so Divisible, that it is as it were alway Divisible, and every Part and Particle therof will still be the same Homogeneous Matter in all respects; so Elementary Spirits, which do Immediately Consubstantiate it; are therefore most Material, or United to it, and Coextended with it, and if they be so Divided with it, yet, as I have said, every Part and Particle of Earth will be Earth, and of Water Water, and so of the rest generaly; though in some respects, as I observed of Terreous Consistence, there may be a difference between Majority and Minority of their Bodys: and Vegetatives, though every least Part or Particle of their Organical Bodys be not a sufficient Domicil and Officine for their Spirits, becaus they are Organical; yet the Branch or Twig of many Trees being sett, will Radicate and Grow, reteining therin a sufficient Portion of their Divisible Spirit to erect a new Oeconomy, and form itself into another Individual Tree, as well as the Root and Stem: but if Sensitives be so Divided, whereby the Principal Parts therof, as the Head, Heart, or the like, have their Organism destroied, they cannot Live; and any other Part Divided from them will not Live long; as an Eel cut in pieces: and yet as Fishes are of the lowest Kind of Sensitives, so generaly after such Dissection they Live longest: I have seen a Tench slitt and Exenterated to leap in the Pan where it was fried; and Fowls will not Live so long as they, nor Beasts as Fowls, as a Chicken after the Head is wrung off Moves itself

both

both longer and stronger then a Beast Decollated, which shews the more Indivisibility of their Spirits. But, as I said, the grand difference between Sensitive and any Inferior Spirits is their Perception and Appetite: for so, though Elementary and Vegetative Spirits also Move their Bodys, yet only Sensitives Move them with Apprehension and Spontaneity, this way, and that way, and every way, as they pleas; and so, though their Motive Powers may not be so strong, yet they are Living, and more Spiritual: and thus they Feed, and Generate, and Act all their Sensitive Operations Sensitively; otherwise they should not be Sensitives. Yet according to the Degrees of Sensitives in their own *Classis*, so also is their Locomotion: and thus Fishes, which are the very lowest Kind therof, are Originaly termed Reptiles; as their Swiming is indeed a kind of Creeping, or Sliding: and so an Eel swims in Water as a Snake Creeps on Land; and though other Fishes in Swiming shoot forth Directly, and make no Curv Lines, yet they only Slide in a more Direct maner; and their Bodys are of a Direct and Oblong Figure for that purpose, being born up, and partly carried, upon an Equident Fulciment of Water: but there are also Testaceous Fishes, which are Gradient, having Claws and Legs for that purpose, like Beasts; and if they Swim, it is also like the Swiming of Beasts: yet that Motion is another kind of Creeping; and they are more Tardigradous, and Multipedous, as generaly more Infirm Bodys are, which need so many Fulciments: and Shelfishes which have no Claws nor Legs, as Oisters, Muscles, and the like, are most Infirm, and, as I suppose, Imperfect *Animals*: but they are no *Plantanimals*, as others term them; for plainly they are Sensitive; and therefore of the Sensitive *Classis*, and so to be Denominated; which appears by their Flesh, and by opening and shutting their shells accordingly as they Sensitively Affect or Disaffect any thing, and many other such Indications of Sens: and though they Continue in their places, yet they are not Rooted in them, nor do Cohere therunto, like Vegetatives; becaus all Sensitives, as I said, are less United to the Elementary Matter, both Internaly, and Externaly, then Vegetatives: and that which is called the Sensitive Plant, is not properly and truly Sensitive, but only fansied to be such, as I said of the Piony: and so the Oatbeard, Marigold, *Heliotropium*, and the like, may as well be said to be Sensitive: wheras clearly their Motions

tions are without any Perception or Appetite, and only by Elementary Rarefaction and Condensation of their Bodys, or by some kind of Vegetative Expansion and Compression, as I shall shew afterward. As Fishes are expressly said to be produced out of the Waters wherin their Spirits were before latent, so they require a Body Aqueous, wherin they Reside and Operate; and they were accordingly formed of the Water, as it was then Mist with the other Elements, and thereby prepared for such productions and formations: and though some may wonder, as I have formerly, at this strange formation of the Bodys of Fishes, how their Flesh, and Bones, which are Firm and Consistent, (though not so much as of Fowls, and Beasts,) should be made of Fluid Water, which could not be Transmuted into Earth, since there is no such Transpeciation, as I have before proved; yet heer also we may see how these Mysterys of Scripture and Nature do Consist and Correspond together: for so it is found by Experiment, that some Trees, and Fruits, as Willows, Pumpions, and the like, may be as much Augmented thereby: and so the whole Sensitive Body is still formed of Bloud: for every *Mistum* conteineth all the Elements, and their Virtues; and there is in Water, or Bloud, also sufficient Matter (and so drink, if not so Nutritive, yet may be as Augmentative as Meat; as appears in such who drink much, and eat litle) and Senfitive Bodys, as of Tadpols, may be formed of Water, and if we consyder the Mistion of all the fower Elements, and the Doctrine of Potentialitys (which I have before deduced from the *Chaos* of all these Potentialitys) and already approved by many other Instances, (as also it may be clearly confirmed heerby) we may understand how, as I have said, it is indeed the *Clavis* of all Generation and Corruption: for thus all the Terraqueous *Composita* are Terraqueous, having also some Misture, though less, of Air, and Æther, in them; and so in their Generation or Corruption, if the Terreous Qualitys be Actuated, they appear to be, and so indeed Actualy are, Terreous Bodys, and have a proportionable Firmnes or Consistence, which, as I said, is a Terreous Quality; as Smoak is turned into Soot, and the like: and if the Aqueous Qualitys be Actuated, and the Terreous reduced to their Potentiality, then the same Bodys will be no longer Firm and Consistent Actualy, but Fluid; as in Fusion and Corrosion of Metalls, whereby it is said, that even Gold itself

self may be reduced to an Oil, or to some such Aqueous Body, and others affirm the like of any Terreous Bodys whatsoever: and so though Aereous Qualitys, according to the less Misture of that Element in Terraqueous Bodys, are not so easily and commonly Actuated, yet thereby, or by Vapor, or both, Camphire, and Salts, may be Volatilised; (as Meteors may be in the Air, like *Amurca*, or Mudder, standing in the top of Water): yea, by Actuating the Æthereous Qualitys therin, the Terraqueous Body may seem to be all Fire; as Iron Candent, Pitch, Wax, Tallow, Oil, Spirit of Wine, and the like, Inflamed. But the Bodys of Fishes are not so Terreous as to Sink to the bottom, nor so Aereous as to Swim and float above the Water, being most fitly poised, and prepared for their Moving in their Native Element, Water. As the Spirits of Fishes are Sensitive, so the more Perfect have all Senses, except Hearing, which some deny, and also that they have any Auditory Nervs: certeinly they do not hear themselvs, becaus they are generaly Mute; and yet I rather conceiv that they have also the Sens of Hearing, becaus they have the more excellent Sens of Seing, though perhaps their Hearing may be very Dull, as their Element of Water is no very fitt *Medium* of Sound. Yet Oisters, and such Imperfect Fishes, have neither of these Scientifical Senses, Seing, or Hearing; but only Feeling, and Tasting, and perhaps Smelling, which, as I have said, is Concomitant and Assistant to Tast; though the distinct Organs of any Sens are not discernible in them, nor any Brain or Heart, but they seem to be one Lump, with something like a Bloud in it, which all Sensitives have, and also, as I suppose, something Analogous to the Organs in more perfect *Animals*, of such Senses as they have; and so of Imagination, and Appetite, which are the common Sensitive Fountains of all the Senses, and wherin they Subsist, (though they have no Imaginative Ingeny) as I shall shew afterward, and therefore no Sensitive can be without them, and consequently not without some apt Organs therof. And heer I must observ, that as every Specifical Nature is most excellent in its own Specifical Difference, becaus it is the very Specifical Difference therof; so in the same *Classis* the lower *Species* may have some Inferior Qualitys more Excellent, or at least more Vehement and Notorious then the Superior. Thus Fishes are generaly more Voracious, and less Valetudinary, then other Sensitives, and Augment vastly, and Procreate

create abundantly, especialy such as Generate by Ejection and Superinjection of their Seeds, and not by Copulation, as is reported of Whales; and their Fecundity is expresly mentioned in the Text, that the Waters brought them forth abundantly, and so again Emphaticaly repeated: and therefore I do not conceiv, as some, that this Difference happened by the Deluge, which indeed did not concern Fishes, becaus it is so intimated in their very Creation. But in all these and many other Piscine Qualitys and Facultys the Whale, and such other grand *Animals* of the Sea, do excell; and such *Thynni*, *Balænæ*, and *immania Cete*, are therefore called Sea-monsters, not becaus they are Anomalous, but from their vast and terrible Greatnes; and the chief of them, which is supposed to be the Whale, is termed *Leviathan*, whom God himself hath largely described elsewhere, and saith of him, *Upon all the Earth there is not his like, he is King over all the children of Pride*, I suppose, in respect of his great Bulk and Strength generaly; though his strength in proportion to his Bulk be not so great as of many Terrestrial *Animals*, especialy the Elephant, which is also termed *Behemoth*, and who in that respect is said to be *Chief of the ways of God*. But Fowls are of the least Bodily Magnitude, though their Spirits be of an higher Kind then Fishes, and yet more allied to them then to Beasts, and therefore made in the same Day with them; and so it is also observed that their Brains are more Conformable to the Brains of Fishes, and the Brains of Beasts to the Brain of Man. The Bodys of Fowls are less, becaus the Air in which they were made to fly, is a more Rare and weaker Fulciment then Water, though otherwise their flying is Analogous to Swiming, and such a kind of Sliding or Creeping, and their Wings and the Motion therof to Fins and the Motion therof: and as they were not produced out of the Air, nor their Bodys formed of it, (for, as I said, all *Animals* as well as Vegetatives are Terraqueous) so neither of the Water, as Fishes; for it is not so said of them, but as it is Originaly, Let Fowls fly in the Firmament of Heaven: and the other words following, *and every winged Fowl after his Kind* seem rather to refer to Gods Creation of them both in that Day, then particularly to their Creation out of the Waters: and it is said afterward of them, as well as of Beasts, *And out of the Ground God formed every Beast of the Earth, and every Fowl of the Air*: but whereas plainly

plainly it is said that Fishes were produced out of Water, and Beasts out of the Earth, and neither is so before particularly expressed of Fowls; I suppose they were made of some more equaly Mist Terraqueous Substance, wherin neither Water did so much Predominate, as in the Bodys of Fishes, nor Earth, as in the Bodys of Beasts: and accordingly the Bodys of Fowls are of a midle Substance, not so Tender as of Fishes, nor yet so Firm and Solid as of Beasts. But Fowls, though they be generaly Oviparous as well as Fishes, yet also Procreate by Copulation, and not by Exclusion of the Seed Immediately, as Vegetatives, and as Fishes generaly are Procreated; nor yet by Gestation in the Womb untill there be a Formation of the *Fœtus*, as Beasts; which is a more perfect Birth, and proper to Superior *Animals*. Certeinly they excell Fishes in their Spiritual Facultys of Sens, and Imagination, as in their Singing, Nidification, and the like; as they are Inferior to Beasts in Imaginative Ingeny, and Act generaly. And wheras there are some flying Fishes, as they are commonly called, so indeed they are not Fowls, but Fishes, which generaly live in the Water, as others, and only fly above it so long as their Wings are wett, which maketh them to be more stiff and strong, as Sails are stifned by wetting: and so Waterfowls are not Fishes, but Fowls, that generaly fly in the Air, though they can also dive in the Water, and continue there so long as their Breath lasteth, as we say; and so Otters, and the like *Amphibia*, are Beasts, and no Fishes: and though there be Aquatical Insects, which afterward prove Flys, yet this is no Transpeciation, but the Worm, both in Earth, and Water, is only the *Embryo*, or Inception, of such flying Insects, as the Vegetative *Embryo* is of a Sensitive *Animal*.

II. Having thus farr discoursed of these two Kinds of Sensitives, Fishes, and Fowls, generaly, according to my Intention, which is only to Elucidate the general System of the World, as God himself hath declared it unto us in this Divine History of Creation, and to conferr Scripture and Nature together, I shall now proceed to discours of Sensation in the same general maner, having already declared what I intend thereby; that is, a Life with Imaginative Perception, and Spontaneous Appetite, whereby the *Animal* doth not only Act and Opetate, as all other Inferior

Natures, but Perceivs what it doth, and Conſents to do it; and ſo alſo Contemplates, and accordingly Affects, or Diſaffects the Object, about which it is converſant, and Exerciſeth its Operations: which is a Double Operation, and not ſuch a Simple, Imperceptive, and Involuntary, or Non Spontaneous kind of Operation, as there is in other Inferior Agents; but alſo with a Senſitive Enjoyment therof, and of itſelf, and its own Operations, in a Living maner by Perception and Appetite, as I ſaid, which are the proper Facultys of the Senſitive Spirit, and that denominateth the *Animal* Senſitive; becauſ Senſitive Spirits wherof Perception and Appetite are the proper Facultys are of an higher *Claſſis*, and farr other Nature then the other Subordinate Spirits Vegetative and Elementary, and the Matter, which they ſo Subordinate to themſelvs, according to that Scale of Nature, as I have formerly ſhewed: and as according to that Scale, Senſitive Spirits are Senſitive in themſelvs, and Subordinate the others Immediately, or Mediately, according to the ſeveral Degrees therof, to themſelvs; ſo alſo their Operations are either ſuch as they can Act and Exerciſe of themſelvs, and by their own Intrinſecal Power; or ſuch as they only Command and Govern, but are Executed and Performed by the Inferior Spirits, Vegetative, and Elementary; but how the Senſitive Spirit doth thus Command and Govern the Vegetative Spirit, and that the Elementary, and the like, is not ſo eaſily Intelligible, becauſ theſe ſeveral Natures are Claſſicaly different; and therefore alſo though the Senſitive Spirit Perceiveth what it doth, as I ſaid, generaly; becauſ it is Senſitive, yet it Perceiveth not how any Vegetative or Elementary Operations are done and performed by thoſe Subordinate Spirits in its own *Compoſitum*; becauſ they are not Senſitive, nor can they, or the Senſitive Spirit by them, Perceiv what they do, or how the Work is done, farther then as it may have ſome Senſation therof in itſelf; which is a manifeſt Evidence to me, that there are ſuch ſeveral Spirits Claſſicaly diſtinct, and which, as I have ſaid, are never Miſt together in the ſame Senſitive, or Intellective, *Compoſitum*, becauſ there are evidently in it ſuch diſtinct and different Operations; wherof ſome are Senſible and Perceptible, and others are not: concerning which I ſhall diſcourſ heerafter, and now Inquire into theſe Myſterys of Senſation, which though they be performed within us, yet are leſs obvious then other things

withous

without us: as any may better ſee how a Chick is formed in the Egg, then how Augmentation is performed within his own Body. Alſo the higher any Nature is, the more Excellent, and Curious, and Difficult it is to be underſtood; And being now entred into this Region of Life, I am very conſcious in what a dark *Adytum* I am, and how litle Light others do afford me; but — *dabit Deus his quoq; finem.* Wherefore grounding my ſelf upon his Word, I ſhall proceed. It is ſaid, *The Life of all Fleſh is the Bloud therof*, or as it is in the precedent words, *the Bloud of it is for the Life therof.* And heer we ſhall ſee again how Scripture and Nature do mutualy Interpret one another. And I ſhall firſt collect from theſe words, that all Fleſh, that is, all Senſitive and Living Bodys, have a Bloud, or ſomething Analogous of whatſoever Color or Craſſitude it may be; and that this Bloud is not only the Aliment or Nutriment, but the very Rudiment of the Life therof, and indeed of the Fleſh itſelf, and all other Parts of the Body Potentialy; as every thing is Nouriſhed by that wherof it is Conſtituted: and thus it is well obſerved, that in the Formation of the *Fœtus*, there is a Bubble of Vital Liquor, which firſt Moves, and ſo forms itſelf and its own Coat or Canale, by a Vital Heat Operating upon it; whereby, in the Fermentation therof, the more Pure and Subtile parts are Congregated in and toward the midle, and the more Groſs and Viſcid are Segregated and amandated to the outſides; and there, as Milk heated, when it begins to cool, hath a litle Skin in the *Superficies*, ſo this Congenerous Liquor, which is the Rudiment of Bloud, and alſo of Milk, doth begin thereby to form a tender Tunicle, or Vein, for itſelf, wherin, as in a Canale, it alſo begins to flow: and afterward the Heart and all the Senſitive Body is formed thereby: and as it doth thus Conſtitute the Body, ſo alſo it doth Nouriſh it; and for that purpoſe paſſeth through the Heart into the Arterys, into which it is Impelled by the *Syſtole* or Contraction of the Muſcular Heart, and Pulſ therof, (which is continued, though leſs and leſs, in and through all the Arterys) and through them paſſeth into the Fleſh, and Veins, and ſo into the Heart Circularly: which, moſt true and very Curious Obſervation was not underſtood by the Antients, nor eaſily admitted by Moderns; becauſ the Paſſage therof, without the help of *Anaſtomaſes*, is ſo hard to be conceived;

but as all Truth which is founded in Nature, and not only in Notion, though never ſo Difficult and Inexplicable, when it is once offered to Mankind, will work out its own way (wheras Error, though never ſo Plauſible, will ſoon be confuted by it, when they are Committed and ſett together) ſo hath this Truth prevailed, and muſt prevail, becauſ it is Truth: and I thus explicate it to my ſelf. I ſuppoſe the Veins and Arterys to be ſeveral Canales, not runing one into another at one end, but at the other meeting at the Heart, as at a Watermill, which receiveth the Bloud out of the *Vena Cava*, as one of the Canales, and diſchargeth it at laſt into the *Aorta*, as into the other Canale; and the Fleſh to be as a very Spongy ground, between theſe two Canales: I ſay the Water diſcharged from the Mill will flow in one Canale with a Pulſ, leſs and leſs, according to the Strokes of the Wheel; which we will alſo ſuppoſe to be ſo diſtinctly and equaly cauſed by every Spoke therof; and becauſ it cannot freely paſs in that Canale where it hath no farther Paſſage and Vent, and may ſoak into the Spongy Earth between it and the other Canale, it will ſo ſoak into them; and alſo ſuppoſing it, being in that Canale, to be raiſed higher (by any Engine or otherwiſe) it will then flow in that Canale to the Mill back again, where it hath a Paſſage and Vent; as, though Water will not eaſily flow of itſelf, but be deteined in a Sponge full of it, unles it be preſt, or more Water come to the Sponge; yet it will flow together freely in any Canale where it hath a Fall, or any other Impulſ; which though in this Scheme muſt be ſuppoſed, yet is ſo Realy effected by the Natural Power of the Living Body, as I ſhall ſhew heerafter. Again, as the Bloud by this Circulation and Tranſudation therof doth paſs into and Nouriſh all the parts of the Body continualy, (which are Potentialy in the Bloud) and is the Nutriment of the Life therof; ſo alſo it is the Inſtrument of all its Living or Senſitive Operations: for from the Heart it paſſeth not only into the *Aorta*, but alſo into the *Carotides*, and ſo to the Brain, wherin it is again purified and rectified, and from the Brain diſcharged into the Nervs, wherin, as well as in the Brain itſelf, it is the Inſtrument of all Senſation, both Perceptive, and Motive: and this Nerval *Succus* is alſo that, which I call Bloud, according to Scripture, which doth not diſtinguiſh it into Venal, Arterial,

Arterial, and Nerval Bloud, but Comprehends all under one common Name, Bloud; becauſ it is indeed one Continuous Flux, as the Ocean is one, though where it flows into ſeveral Seas it acquireth ſeveral Names. Having thus premiſed and ſtated the *Phænomena*, I come now unto the grand Difficulty, how all Senſitive Operations are, or can be, ſo curiouſly and wonderfully effected by the Spirits Elementary, Vegetative, and Senſitive. And firſt, as I formerly ſaid, I conceiv that there is a proper Elementary Miſtion, which is Subordinate to every Vegetative Spirit, as well as a proper Vegetative Spirit, which is Subordinate to every Senſitive Spirit; and in this Miſtion we commonly take notice of two Elementary Qualitys, which are indeed moſt notable, that is Heat, and Moiſture, and which we do therefore Eminently call Innate, Vital, and Radical; but certeinly we cannot conceiv that the Heat is without any allay of Cold, or the Moiſture of Drines; for then they ſhould be ſo Vehement and Exceſſive, that they ſhould not be Vital and Radical, but Mortal and Final: wherefore there muſt be ſuch a Temperament of all theſe fower Qualitys, and conſequently a Miſtion of the fower Elements, and Elementary Spirits, wherin they do Subſiſt; and as theſe fower Qualitys are ſuſceptible of More and Leſs, and thereby of many various Degrees, ſo according to the Arithmetical Rule of Changes the various Miſtions therof, beſides other Simple Elementary Qualitys, may be Innumerable unto us. Now the Vegetative Spirit, to which the Elementary are Immediately Subordinate, doth Collect and Contemper for itſelf a proper Miſtion, and fitt Temperament therof, ſuch as Naturaly it requireth; that is, ſuch as God himſelf, when he had firſt prepared the Elements, and after them Vegetatives, in making of Senſitives in this Fifth Day, did then Collect and Contemper for the Vegetative, and ſo prepared and inſtructed the Vegetative for the Senſitive Spirit, according to every Kind and *Species* therof; which was, as I have ſhewed, the Original Generation or production therof, and firſt Inſtitution of all Generation and Corruption, according to which all Succeſſive Generation doth and ever ſhall continue unto the End and Corruption of this whole Elementary World. And this proper Miſtion is not only the *Craſis*, but alſo the *Criſis* of the Life of the *Animal*: for as it is Subordinate to the Vegetative Spirit, it is Oeconomical, and ſuch as doth according to the Ori-

ginal Rectitude and Temper therof Naturaly Increaſ to an *Acme*, and from thence Decreaſ again to a Period; unleſs it be Violently diſturbed or altered; which is the true cauſ of all Diſeaſes (which we therefore call Diſtempers) but if there be no ſuch Violence offered unto it, then the Senſitive *Animal* doth continue from the Birth untill the Death, or Diſſolution therof, (like a Lamp which goes out only for want of Oil) in ſound and perfect Health, yet with ſuch Degrees and Variations from one Stage therof unto another, as I have formerly ſhewed: and though according to the State of this Original Temperament the Thread of one *Animals* Life, as we call it, may be ſtronger or longer then of another, yet I conceiv it is always according to this firſt Vital or Radical Miſtion or Temperament, in which the Conſtitution of every Senſitive Body is founded; and though Augment and Decrement, as well as Nutrition, be of the Vegetative Spirit, yet it is alſo by this Elementary Miſtion, which that doth Subordinate to itſelf, but cannot alter any Primigeneous Error therin, which is Naturaly in it, though both Nature and Art may Cure Violent Accidents; and though Nature doth of herſelf always intend the Beſt, as ſhe did obtein it in this firſt Creation, when all things were made Good and Perfect, yet being now blaſted, there is alway ſome Error, more or leſs, appearing therin; and eſpecialy ſince the Floud, wherin the *Secula* were Abbreviated Extraordinarily by a farther Curſ and Puniſhment of Sin: and yet alſo before, there were Natural Bounds ſett by God in the very Principles of Generation itſelf, as well as he hath ſett Bounds to the Matter and Body of the World. Now, wheras I ſay, that in Generation this proper Elementary Miſtion and the Temperament therof is Governed by the Vegetative Spirit, I do not intend therefore that the Vegetative Spirit is firſt produced; for as in the firſt Creation, ſo ſtill the Elementary Spirits are before the Vegetative; but I ſay that the Vegetative Spirit, which then begins to be produced, doth by and with the proper Miſtion of the Elementary Spirits ſo begin to Operate and Contemper them; and is, as I conceiv, that Operator or Motor therin, which is called *Punctus ſaliens*, and the Architect of the Body, and which being alſo Oeconomical and Periodical in itſelf, doth accordingly Govern the proper Miſtion as Subordinate to itſelf. And wheras not only Elementary, but alſo in and with them Vegetative,

tive, and Senſitive Spirits, are Confounded and Coagulated in their *Chaos*, without any Actual Oeconomy, or Individual *Compoſitum*, all the Potential Principles therof are collected in the Seed, and prepared by the Generator; not only in Herbs, and Trees, which is ſenſibly Evident, and acknowledged by all, but alſo in all Senſitive Generation of Fiſhes, Fowls, and Beaſts, which is denied or doubted by ſome; wheras almoſt every where in Scripture, not only the *Fœtus* of Beaſts, but alſo Children are termed the Seed of the Man, as well as of the Woman; and ſo were ſaid to have been in the Loins of the Man, as well as to be in the Womb of the Woman: nor can the Woman Naturaly Generate without the Man, any more then the Man without the Woman: And wheras it is Curiouſly obſerved, that no Seed appears in the Womb after Copulation, this indeed ſhews the way of Impregnation not to be, as hath been ſuppoſed, by the groſs Matter of the Seed, appearing there as in the cold Air, but that it is more Colliquated Attracted and Imbibed, whereby the Womb is Imbued therwith, and ſo alſo with the Womans own Seed, and thereby ſhe is Fecundated; and ſo is the Egg or Seed of the Hen by the Seed of the Cock; which, I conceiv, appears Senſibly by the Procreation of Fiſhes, wherin the Seed of the Female being Ejected is Imbued by the Milky Seed of the Male Superinjected (and ſo is the Seed of Man ſaid to be powred out as Milk) and alſo by the Wombs of other Senſitives, which thereby become more replete, moiſt, and lubricous; (as the Womb of the Earth is by Rain) and ſo the Female is ſaid to Conceiv the Seed of the Male: and as the Bloud is the Life, or for the Life of the Generator, as I ſaid, ſo the Seed is a Deciſion and farther Concoction therof in the Teſticles; that is, not only of the Venal, and Arterial, but alſo of the Nerval Bloud; as ſenſibly appears by Evacuation therof, which very much affects the Brain; when *Pythagoras* called it *Stilla Cerebri*; and Caſtration doth Effeminate and ſtrangely alter the Habit of the whole Body. Nor is it more difficult to conceiv how the Seed ſhould ſo Imbue the Subſtance of the Womb Internaly, and Impregnate it, and thereby the Egg, then how the Bloud Venal, Arterial, and perhaps alſo the Nerval, (as it ſeemeth by the Seed) ſhould Penetrate and Invigorate the Fleſh, and other Parenchymes, and the whole Body. And heerby we may

underſtand how fallacious Senſ and Experiment is, and not to be truſted alone, without the Harmonious Concurrence of Faith and Reaſon, even in Senſible things; for thus if we go never ſo litle beyond the very Senſation itſelf we may ſoon be deceived, and unleſs we be very accurate, our Senſ may deceiv itſelf in the very Senſible *Phænomenon.* The Senſitive Spirit, as I ſuppoſe, is not produced aſſoon as the Vegetative, to which the Elementary are Immediately Subordinate, and therefore untill that be produced in ſome Embryonical Inception, there will be only an Elementary Maſs: but the Vegetative Spirit begining to come forth out of its *Chaos*, in and with the fitt Miſtion which it requires and Governs, there appears ſomething like a Life, which yet is only Vegetative; and though the Senſitive Spirit be alſo then latent in the ſame *Chaos*, and be ready to iſſue forth aſſoon as the Organical Body is Completed in all the Conſtituent parts therof, though at firſt more Rudely and Embryonicaly; yet untill then, it doth not truly Live, nor Operate Senſitively with Perception and Appetite; which is therefore called, *The time of Life*; and accordingly, as is ſuppoſed, was the Judgment of Life or Death, for ſtriking a Woman with Child, whereby ſhe miſcarried: but, as I ſaid before, there is firſt an Operation of the Vegetative Spirit and Organiſation of the Body; and ſo not only the Vital Heat doth Move the Liquor, by Rarefying and Impelling it, but there is alſo the *Punctus Saliens*, Regulating that Motion, and the Body Moved, by its Plaſtical Virtue; as when the Glaſs is heated in the Furnace, and thereby in Fuſion and Motion, the Glaſs-man by blowing doth Effigiate it as he pleaſeth, whereby he doth alſo Move it this way, and that way, according to his Art: and ſo doth the Vegetative Spirit Move that Rudimental Liquor Naturaly by its own Plaſtical Virtue, whereby it doth Effigiate the whole Body, which cannot be without Motion: and ſo the *Syſtole* and *Diaſtole* of the Heart indeed are not Elementary Motions, but Vegetative; for Heat, the chief Elementary Mover, doth not Contract, which is the Motion of the *Syſtole* of the Heart, but Expand, which is needles therin, for the *Diaſtole* is the Natural Expanſion of the Heart itſelf. Alſo it is Regular and Reciprocal, ſuch as ſcarcely any Elementary Motion is of itſelf: for ſo though the Motion of Tides be Elementary, and alſo partly of the Matter, and *Pondus* therof, in the Fall of the Water, firſt one way,

and

and then another, as I have ſhewed; yet it is Regulated by the Courſ of the Moon, which itſelf alſo (as all Motions of Æthereal Bodys) is indeed Regular, but not Reciprocal; and I ſuppoſe theſe, and ſuch like are Critical Symptoms of Vegetative Motions; and ſo, as I have ſaid, Elementary Motion of itſelf is of Rarefaction and Condenſation, and not of Expanſion and Contraction, wheras there is a Contraction of the Heart in the *Syſtole*; though, as before, I conceiv the Heat of the Bloud and Elementary Motion therof by Rarefaction and Impulſ to be Subordinate and Subſervient therunto, and that thereby the Pulſ is more Vehement, and the Bloud in the Veins Impelled; otherwiſe without any ſuch Natural Inſtrument to raiſ it, (like Water by an Engine) as I have ſhewed, I do not well ſee how it can aſcend in the Veins, but rather that both Concurrent Motions are needfull and requiſite to cauſ the whole Bloud in a Mans Body to Circulate about twelv times in an hour, as it doth continualy; and plainly in Exerciſe and Contention, whereby the Body and Bloud is heated, the Pulſ is more quick, and leſs when it is Chilled with Cold: (and ſo Moiſture applied to the Heart taken out makes it to Move again). And clearly theſe are no Senſitive Motions, becauſ we do not ſenſ them, as we do Expulſion and Retention, which are Vegetative by Expanſion and Compreſſion, as well as Senſitive, and Spontaneous or Voluntary, and ſo farr we may perceiv the Operation, but we know not how the Vegetative Spirit doth Expand or Contract by its own Specifike Power: and ſo the Senſitive, yea the Intellective Spirit of Man, though it doth Perceiv whatſoever it doth itſelf, and how it Commandeth the Inferior Spirits, yet doth not Perceiv how they do Obey and Perform; as, though I do very well Perceiv that I do See, Hear, Move, or the like, yet I know not how theſe Operations are Performed in me by Vegetative, and Elementary Inſtrumentalitys, wherof the firſt and moſt common is Bloud, but Immediately and Principaly the Nerval Bloud, or *Succus*. Now wheras Phyſicians ſay, that there are three ſorts of Spirits, Natural, Vital, and Animal, (which I confeſs I do not ſo well underſtand, or that there are any ſuch Spirituous Corpuſcles in the Bloud which do Invigorate it) I conceiv rather that it hath itſelf, and in its own Subſtance, all thoſe Qualitys which they attribute unto ſuch Corpuſcles; and which I ſhall ſo call Animal Spirits, or Spiritual Qualitys, very

Pure and Powerfull, and the moſt Refined of any thing that is Elementary; and I ſuppoſe that they are ſo Prepared by the Vegetative Spirit, and are the moſt Immediate Inſtruments of the Senſitive Soul in all its Senſations; and ſo, as the Stoiks ſay, *Vincula Animæ & Corporis*, whereby there is ſuch mutual Converſation between them: for certeinly by their Inſtrumentality we See, Hear, Imagin, Affect, and Move the Body Senſitively with Perception and Appetite: and ſo we find that the Brain, wherin they chiefly Reſide, works, and grows hott, and that they are Exhauſted, and muſt be at leaſt every Night Recruited by Sleep; wherefore ſince plainly there are ſuch Animal Spirits, or Spiritual Qualitys, Subſiſting in the Nerval Bloud, or *Succus*, I will adventure to inquire farther into them. And, as I ſaid, this Nerval Bloud, which hath paſſed through the Heart, and was there once before Refined and Subtiliſed, doth aſcend into the Brain, and there is again Refined and Purified by the Concoctive Faculty of the Vegetative Spirit in another maner, and for other uſes and purpoſes: wherefore the Brain is not ſo Calid, nor Motive, but more Cool, Moiſt, and Moderate, wherin the Vegetative Spirit doth Temper this Arterial Bloud, Percolating it through the Mæandrous Paſſages therof, and ſo Qualifying, and Concocting it, and producing the Animal Spirits, or Qualitys therin, for the ſervice of the Senſitive Soul; as it doth Temper and Digeſt the other Bloud, for Nutrition, and Augmentation of the Senſitive Body, and for Generation, and other ſuch Inferior and Subordinate Uſes: and from the Brain, as the Fountain, this Nerval *Succus* is diffuſed into the *Spina*, and Nervs, as the Streams: being indeed of a wonderfull Purity, and Vigor, whereby it hath not only Potentialy the *Species* of Senſibles (as Extenſion hath all Figures in itſelf Potentialy) which the Senſitive Spirit can call forth and Elicit; but alſo a very great Strength, which the Senſitive Spirit likewiſe Governs, like a well managed Horſ, how and when it pleaſeth. And certeinly theſe are the moſt Spiritual Extractions, Powers, and Virtues, of Elementary Spirits, and the moſt Subtile and Sudden Artifices of Vegetative Spirits, and moſt like to Senſitive and Intellective Notions and Motions: and therefore the Immediate and moſt apt Inſtruments of thoſe higher Spirits, and of their Operations; and which plainly diſcover the Combination between Superior and Inferior Spirits, as I ſhall ſhew heerafter.

after. And though I doubt, that heerin I may seem Novell and Curious, yet I shall shew how farr I satisfy my self concerning them, wherof I do thus conceiv; that this Nerval Bloud, or *Succus*, is, as I said, a most Refined Elementary Substance, prepared by the Vegetative Spirit for these Uses and Services of the Sensitive Spirit; and that as in the fower Elements, and their Mistion, there are Potentialy all Sensible Qualitys, which are variously Actuated therin, and many of them very Momentaneously, as Light, Colors, Sounds, and the like, and so also Magnetike Virtue, and such other more Subtile and Pure Qualitys; and also their Irradiations and *Species* Abstracted thereby as Colorate *Species* by Light, and the like: so the Vegetative Spirit, at the Command of the Sensitive, doth by another more Spiritual and Plastical Virtue Actuate these Spiritual Qualitys, as it doth Corporeal Figure, and the like Affections of the Matter, and more Gross Elementary Qualitys, in Effigiating the Body, and producing that proper Mistion of the Elements, which it requires and Subordinates to itself; and also doth Extract some other Internal Emanations and *Species* therof, more Subtile and Pure then the External Emanations and *Species* of Colors, and the like, though not so Vivid and Permanent, but like Spectres and Ghosts of the deceased; both which the Sensitive Spirit doth also Irradiate, and thereby the Imagination Internaly Contemplates them, when the Sensible Object is present, and also when the External *Species* depart and are absent. *Like unto a Man, who beholding his natural Face in a Glass, for he beholdeth himself, and goeth his way, and streightway forgetteth what maner of Man he was:* where are expressed or intimated, all the several Degrees of Purification and Sublimation of the *Species*; that is, both the Immediate *Species* Emanant from the Colorate Face to the *Speculum*, and the Reflection of the Image or Picture therof to the Ey of the Man beholding himself thereby, which I call External, and which when he goeth his way and departeth from them, do also depart from him; and so he forgetteth them, but still he hath some Internal Vision therof in his Imagination, which is by another Internal *Species*, as the Type of the former, or an *Umbra*, and as it were an Apparition, which very suddenly appeareth and disappeareth, so that a man Comparatively is said to forgett what he before beheld. Now certeinly the External *Species*, either Direct, or Reflex, which are Emanant from the Face, and Reflected

from the Glass, when the Man goeth his way and departeth from the *Speculum*, do no longer continue in his Ey, or Optike Nervs; for it was the *Species* of the Colorate *Superficies* of his Face, which is Emanant Directly outward, and was Reflected toward the Ey only by the Glass; and when he removes his Ey from the Glass, that Reflection to the Ey ceaseth, and then it is as if any other Directly Visible Object were removed from the Ey, whereby also the *Species* Emanant from it, and Subsisting in it, are removed, and so the Vision ceaseth: and yet there is such another Internal Vision by the Imagination, as I have shewed, and every Man may sensibly perceiv in himself; though, as the Scripture very Curiously intimateth, he hath a weaker and shorter representation of his own Face, wherof he beholdeth only the Reflected Image in a Glass, then of the Face of his Wife or Child, which he beholdeth Directly and more Immediately. Now certeinly the Imagination cannot so behold Internaly without some Internal *Species*, as the Ey cannot see External Objects without such an such an External *Species*: and this Internal *Species* is not any such Image of the External, as that which appears in the *Speculum* by Reflection is of the Direct *Species*, but another thing Separate from it, when the Object, and all the Emanant and Reflected *Species* therof Subsisting in it, are absent and wholy removed; and of another Nature farr different from the former; and more spiritual and Phantatical, and Transient as Thought; nor can it Subsist in the Imagination itself, which is a Sensitive Spirit; becaus this is the *Species* of some Sensible Quality, which is Elementary; and so are all the *Species* therof, whether External, or Internal; nor is it so Actuated and produced as they, by any such External Irradiation, as Color, or by any such Motion as Sound, and the like; but only at the Command of the Imagination, which being a Faculty of the Sensitive Spirit, and such Contemplation of External Sensibles by these Internal *Species* not being performed without them, nor by any Intrinsecal and Specifike Power of the Imagination alone: therefore it must be, as I conceiv, by the Mediation of the Vegetative Spirit, which first prepares this Elementary Substance, or *Succus*, wherin they Subsist Potentialy, and when the Imagination calls for them, doth Actuate and produce them; and so when the Imagination doth Animadvert, it doth Irradiate them by its own Light, as I may so term it, which is yet more Spiritual, and Sensitive; and thereby

doth

doth ſo Contemplate all Senſibles in ſuch litle Types and Images (wherin they are Pictured in Small) and ſo very Subtile and Spiritual, which is indeed very admirable: and ſo alſo is Senſation by the External *Species*, which in the Ey and Optike Nervs are very ſtrangely Contracted and Subtiliſed, as I ſhall ſhew heerafter. And now proceed from theſe Spiritual *Species*, which are the Inſtruments of Imagination or Speculation, to conſyder thoſe Spiritual *Poteſtates*, which are the Inſtruments of Appetite, and Spontaneous Motions; and theſe alſo may be in the ſame Nervs, and Nervous *Succus*, together with the others, for ſo all the Nervs are generaly Tactive as well as Motive; and this ſufficiently convinceth me that they are neither of them any ſuch litle Corporeitys, as is ſuppoſed, which cannot probably be together in ſuch litle Cavitys without diſturbing and diſordering one another; wheras clearly ſuch Spiritual Qualitys may ſo Subſiſt together in the ſame place and not to be Confounded, or Miſt (as two Lights) and ſo though they be Heterogeneous and of different Natures; as Light and Heat (which heerin are ſomwhat Analogous to theſe two Spiritual Qualitys in the Nervs; that is, the Perceptive are as Light, and the Motive as Hear) yet they may well conſiſt together. And as the *Species*, which are the Inſtruments of Perception are, as I ſaid, of an Elementary Nature, ſo more manifeſtly are the Motive Spirits, which are ſenſibly excited by Heat, and dejected by Cold, though they be both in themſelvs farr more Spiritual and Æthereal then theſe common Culinary Qualitys of Light and Heat; for, as I have ſaid, theſe Motive Spirits are ſuch and ſo prepared, that they Move not at all; but are in their Potentiality as the others, untill the Appetitive Faculty of the Senſitive Spirit Command them; and then the Vegetative Spirit, which by its Plaſtical Virtue did prepare them for this purpoſe, doth Immediately Actuate and produce them; and ſo they, like Gunpowder Incenſed, ſuddenly and ſtrongly Move the Body; and yet no more or any other parts therof, nor in any other maner, then according to the *Imperium* of the Senſitive Spirit, and the Specifike Power therof; which is the firſt Mover itſelf; and doth ſo Move them, as the Imagination doth Contemplate the *Species* Actuated and produced by the Vegetative Spirit; though the Motion of the Body be Immediately by the Vegetative Spirit, and Motive Animal Spirits themſelvs; as the Immediate Repre-

ſentation is by the *Species* : and ſo I conceiv that the Senſitive Appetite alſo Moveth theſe Motive Spirits, not as a Coachman doth Exhort his Horſes only with his Voice, but as he Governeth them with the Reins, whereby he guideth the Coach, and cauſeth it to go this way, or that way as he pleaſeth, though it be Immediately drawn and Moved by the Horſes, as the Body is by the Vegetative and Animal Spirits: and this is the Gubernation that I intend, whereby the Superior Spirits thus Govern the Inferior, that is, not only by a bare *Imperium* or Command, but a Spiritual and Superior Motion, which I call, *Gubernatio*, or Guiding, reſpectively according to the ſeveral Natures of the Motions; but alway according to its own Nature, and the Specifike Powers therof, that is, Spiritualy, and Senſitively with Perception and Appetite, and not without them. Thus when the Senſitive Spirit would Imagin, it Commandeth that ſuch Internal *Species* be Actuated and Produced, which it alſo, as it were, dictateth and calleth for what it would have, and itſelf alſo Irradiateth and Contemplateth them; and though, as I have ſhewed, they are indeed of an Elementary Nature, Prepared, Actuated, and produced, by the Vegetative Spirit, yet the Performance is ſo Conſentaneous, that we are apt to think, that our Imagination doth Create all its Phantaſms in itſelf, and of itſelf; (as Poets are ſo Poeticaly termed Makers). And ſo when it would Move the Body it not only commandeth that the Motive Spirits be Actuated and produced, or that, as I ſaid, the Horſes be made ready, but it alſo by a Superior Motive Power Guideth and Governeth them ſo Spontaneouſly, that we are apt to think that our very Soul doth Move the Body Immediately by its own Impulſ of the Appetite and Will, and without any ſuch Inſtrumentality of our Vegetative, or Elementary, Motive Spirits; which yet we muſt acknowledg, ſince we plainly perceiv, that if there be any defect in them, the Operations of the Soul are alſo defective; yea many other very Curious Artifices and Motions of theſe Inferior Spirits in our own Bodys, (that is, ſuch as be not ſo Immediately Subſervient to the Senſitive Operations of the Imagination and Appetite) are performed without the Imagination or Appetite; as Nutrition, the Motion of the Heart, and the like; which we therefore call Involuntary, becauſ therin the Vegetative and Elementary Spirits do not Ordinarily attend the Command of the Senſitive

Senſitive Spirit, nor are Governed thereby. Yet alſo, as they are ſuch proper Inferior Spirits Subordinate unto it, and Conjunct with it in the ſame *Compoſitum*, ſo there is, as I ſaid, and ſhall now ſhew, a very notable Combination between them; which may plainly appear by many Extraordinary Effects, and ſuch as may ſtrangely vary and alter them: thus, as I have formerly obſerved, Mirth helps Digeſtion, and is as it were the Nurſe of Nutrition, whereas *the Sorrow of the World worketh Death:* and theſe Senſitive Affections not only cauſe ſeveral Motions of the Bloud, and Alterations therin, but alſo in the very *Syſtole* and *Diaſtole*, and Palpitations of the Heart; and, which is yet more Notable, in the very Generation of another *Individuum:* and not only the Motive Power of the Appetite, but alſo the Imagination itſelf doth ſtrangely Operate heerin; as we commonly ſay, Conceit may do much; that is, concerning any thing which is Internal, either in our Mind, or Body, yea in the very *Fœtus*, while it is in the Womb, and Nouriſhed by the Parent, and is yet as it were ſome part of the *Compoſitum* therof; eſpecialy while it is more Young and Tender, and more capable of ſuch Impreſſions; but chiefly in the very Act of Generation (which *Jacob* knew, or was Supernaturaly taught and aſſiſted by the Angel, who appeared to him) for as it grows more Perfect in itſelf, and is neerer to Excluſion, it becomes more Separate from the Parent, and another *Compoſitum* in itſelf, and more firm and ſtrong, and ſo leſs capable of Impreſſions by another: and thus I conceiv, that the Imagination or Appetite of the Father doth not Operate upon the *Fœtus* in the Womb of the Mother, nor of an Hen upon an Egg Excluded, whiles ſhe Incubates, and is hatching it. But the moſt wonderfull thing is, how the proper Vegetative Spirit of any Senſitive *Animal*, by the Command or Intimation, of the Senſitive Imagination and Appetite, ſo Fanſying and Affecting ſome other Vegetative thing, ſhould Actuate and produce in the *Fœtus*, not only Signatures therof, but alſo ſomewhat of the ſame Vegetative Nature: as I have been very credibly informed of a Perſon, whom I well knew, and have often ſeen the Mole on his Chin, which was ſaid to have been cauſed by a Cherry thrown at his Mother, while ſhe was Pregnant of him, in a Frolike among Ladys who were then eating Cherries; that every year in the Seaſon when Cherry trees begin to budd, the Mole began to budd, as I may ſay, and

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ſo ripen more, and at laſt putt forth ſome little Tufts, and be very angry and troubleſome; and then again, as the Seaſon of Cherrys departed, to decreaſ likewiſe, and be leſs ſenſible; whereby it did plainly diſcover ſomething of the Ceraſine Nature, Inoculated as it were into the Body of a Man. Wherof I know no other account to be given, but only this Combination and Cooperation of the Senſitive and Vegetative Spirit: and though, as I have ſhewed, there is no Univerſal Spirit, or *Anima Mundi*, from which ſuch particular Spirits may be derived and produced in any Bodys whatſoever; yet it is truly enough ſaid, *Omnia Animarum ſunt plena*, if it be rightly underſtood; that is, as in the firſt *Chaos* the Spirits were latent in their proper Elements, out of which they were produced in the Six Days, ſo ſtill there are Æthereal, and Aereal, Spirits in Æther, and Air, out of which Comets, and the like Æthereal, or Aereal, Meteors may be produced; and ſo the Terraqueous Globe, or the *Cortex* therof, is Pregnant not only with the Elementary Spirits of Water, and Earth, but alſo of Vegetative and Senſitive Spirits, which while they are therin, as in their *Chaos*, are diſperſed and diffuſed, and ſo Confounded as in a *Coagulum*, Inane, and Inform, that is, without any Oeconomy, or Inviduality, which is afterward Actuated and acquired by Succeſſive Generation ſtill producing them according to the Archetypes or *Protoplaſta* of Original Generation Inſtituted in their firſt Improper Creations, as I have often mentioned: and though they cannot always attein their Regular Perfections according to the Law of Nature, yet there may be ſeveral Degrees therof to which they may arrive, and ſo their productions be more or leſs Anomalous or Monſtrous, by reaſon of many Obſtructions and Defects: wherof the greateſt is the general Curſ of Nature for the Sin of Man; ſo that now indeed, both he, and all this Spectable World, which was given unto him, and all things therin, have ſome Monſtroſity in them; and there is now none of them exactly Perfect according to the firſt Inſtituted Law of Nature, but all are Heteroclitically Redundant, or Deficient: and though we take leſs notice of others, yet ſome are ſo miſhapen, that we Eminently term them Monſters; and others ſuch Imperfect Inceptions, that we hardly diſcern any thing of the Specifike Nature therin: and ſuch I conceiv this Ceraſine Meteor, as I may ſo term it, in the Body of Man to be;

be; whoſe Ceraſine Spirit, though the *Compoſitum* therof was Corrupted by Eating and Converſion into the Nutriment of the Mother, and conſequently of the Child in the Womb, yet was latent in the new *Compoſitum* Generated by that Corruption; and that by the *Imperium* and Impreſſion of the Mothers Imagination and Appetite working on her proper Vegetative Spirit, and that on its own Nutriment, the Ceraſine Spirit was Equivocaly, and very Rudely and Imperfectly produced; For thus, as I have ſaid, the Vegetative Spirit doth Actuate and produce Elementary Miſtion, Qualitys, and *Species*, as Subordinate and Subſervient to itſelf, though Claſſicaly different; and ſo it may alſo Imperfectly produce another Vegetative Spirit, which is of the ſame *Claſſis* with itſelf, as well as one Spirit of the ſame *Claſſis* may, be Miſt with another; and thus I conceiv, that as there apparently is an Individual Oeconomy in every particular *Compoſitum*, ſo alſo a Specifical and Claſſical Polity, Subordination, and Combination of ſeveral Natures, eſpecialy in the ſame *Compoſitum:* and that thus the Senſitive Spirit by its own Specifike Facultys doth Command and Govern its own proper Vegetative Spirit, which alſo by its own Specifike Powers doth Serv and Obey it; and likewiſe Order and Govern the proper Elementary Miſtion that it requireth, which accordingly doth Serv and Obey it Naturaly, with all Suavity and Facility: And thus as the Imagination doth more Spiritualy and Senſitively Irradiate the *Species*, whereby it doth Perceptively Contemplate them; ſo the Appetite doth alſo Senſitively enliven the Spirits, whereby it doth Spontaneouſly Guide and Govern them without any Violence or Reluctance; unleſs their happen ſome Diſtemper and Diſorder among them: and I ſuppoſe, that as there are theſe Confederacys and Combinations between Spirits, according to the Scale of Nature and Oeconomy therof, ſo alſo there is a Subordinate Approximation, though no Participation, Communication, or Confuſion, of their different Natures; and that the proper Vegetative Spirit of any Senſitive *Animal* is farr more Excellent and Spiritual then of any Graſs, Herb, or Tree; and of Superior Senſitives more then of Inferior; as of Fowls more then of Fiſhes, and of Beaſts then Fowls, and of Man then any others: and ſo alſo that the proper Elementary Miſtion which is Subordinate to Vegetatives, is more Excellent and Spiritual then any

other Elementary *Mistum*; and of Superior Vegetatives more then of Inferior, and so of the Vegetative Bloud which is the Instrument of Sensitive Life, as I have shewed, then any others whatsoever.

III. Having thus largely discourſed of this very Curious and Mysterious way of Sensation generaly, whereby to make way for the Explication of the several Kinds of particular Sensations, I shall now also proceed to discourſ therof, and thereby to Confirm this general Doctrine of Sensation. The Senses are particularly Five; though they all Subsist in the Imagination, which is seated in the Brain, as I shall shew heerafter, but they are rightly thus distinguished, becauſ they are Realy several in themselvs; for Oisters, and some such Imperfect Sensitives, have some of them, and not others, which they want not only Actualy, but also Potentialy; so that an Oister may be no more termed Blind, or Deaf, then a Stone: and thus, though in every *Classis* all the several *Species* of that *Classis* have such Generical Spirits and Qualitys, as Denominate and make them to be of that *Classis*; as Oisters have Sensation generaly, and therefore are Sensitive *Animals* Genericaly as well as Beasts, or any most Excellent Sensitive; yet their proper Sensation is Specifical, and Specificaly different; as every Grass, Herb, and Tree, is Vegetative, and yet every one of them, and every kind therof, hath a proper Specifical Spirit, and Qualitys; as apparently they have their Specifical Plastical Virtues, which do so severaly Effigiate them, and the like: and so also have Sensitives, so farr as they are specificaly different, their several ways or maners of Sensation, as may also appear by the several Formation, Quantity, and Quality, or Temper of their Brains, and Organs; as the Eys of some Insects are not Movable, and then they are Multocular, as well as many of them Multipedous; and Biocular *Animals* have also their Eys of several Figures, and Coats, and Temperatures; and thus there are some such Generical Differences which vary the *Classis*; and they are greatest and wideſt, as Intellective, Sensitive, Vegetative, and Elementary; and some that vary the *Species* more or less Subalternately, as Fishes, Fowls, and Beasts; and of Fishes, Oisters, and Whales: and accordingly their Specifical Differences are more or less, but all less then Classicaly Gene-

Generical; and some that only vary the Individuality, as the particular Individuality and Oeconomy of every *Compositum*; among which also there may be More or Less of the same Specifical Qualitys, but such as doth not vary the *Species*, and therefore is least of all; as *Myopes* do not see in such maner as others of the same *Species*, and yet their Sight is Specificaly the same with other mens Sight. And thus, as I have said, nothing of any one *Classis* doth, or can, partake of that which makes a Classical Difference in others; for then they should not Classicaly Differ, nor any of one *Species* of the Proper Specifical Difference of another, nor any one *Individuum* of the Individuality of another, otherwise they should not so Differ; nor of the Differences of their Spirits and Qualitys, whereby only we can know them, otherwise we could not so know them, nor affirm them to Differ: but contrarily every *Individuum* doth partake of the Specifical Difference, and every *Species* of the Classical Difference therof; otherwise they should not be of the same *Species*, or *Classis*. And thus the Senses are more Genericaly Five, and may be more Specificaly as many as there are several *Species* of Sensitives, as well as they are Individualy as many as there are several Sensitive *Individua*. And wheras they are so said to be Fivefold according to their Fivefold several Organs, that is, their External Organs, Eys, Ears, and the like, which also the Scripture doth often mention as such, generaly and Comprehensively (as it doth deliver almost all things of Natural Philosophy in that general maner, according to the first System therof, and leav Particulars to our farther Search and Study); yet if we farther Inquire into them, we shall find that the Nervs, and Brain, and Elementary Qualitys, or Animal Spirits therin, and the Proper Vegetative Spirit, and Virtues therof, are also Internal Organs, that is, Instruments of Sensation, as well as Eys, and Ears, and the like Corporeal Organs, which are External: and indeed the several Organs do not make the Senses several, but rather the several Senses do require such several Organs: for the Corporeal Organ of Tact is the whole Body, or all the Nervs, which are Tactive, and every Organ of the fower other Senses must have Tact or Feeling, which is the Sens of all Senses, as the Organ therof is the Organ of all their Organs; and so is the Object therof, which we therefore call the fower first Qualitys (though otherwise they are

not first more then others, as I have shewed); and wheras the Objects of all the other Senses are Compounded of some such other first Qualitys, and probably cannot Exist without some fitt Mistion of these fower first Qualitys also, as Subordinately and Fundamentaly requisite in their Composition, though they are not Immediately Compounded therof: so likewise the Object of this Sens, as it is in itself, is not all, or any of these fower first Qualitys severaly, but a Mistion or Composition of them, as well as the Objects of all the other Senses are Mist and Compounded of their several Principles: for indeed any of these fower First and Simple Qualitys are too Vehement Sensibles, in themselvs which would destroy the Senses, yea and all Sensible things, and one another; and therefore, as I have said, never Exist Actualy without such a Mistion, as their Elementary Spirits were so Mist in the three first Days, before which no Vegetative or Sensitive Nature could be produced, and so must continue as long as this present Nature, and from the Original Generation unto the Final Corruption therof. Also all the Organs, both External, and Internal, do require the Vegetative Spirit, and Virtues therof, Plasticaly to Form them, and Temper their Elementary Qualitys, and also to Actuate and produce their Animal Spirits, as I have shewed: and this I conceiv to be the very Organism of all the Organs of Sensation, and Instrumentalitys of the Sensitive Spirit, wherin as Tact or Feeling is Ingredient, as I said, so it is in itself the Fundamental, and lest Fallible, and as it were Corporeal Sens; yet Contact of Bodys, (as it is said, that nothing can touch or be touched but only Bodys, and so indeed there must be a Contact of all Bodys without any Discontinuity or Vacuity, as I have shewed) which is Corporeal, and Tact which is Spiritual, do very much differ: for so Heat by its Emanant Rays may be felt at a very great distance without Corporeal Contact, as well as Light, or Color, may be so seen; and yet it is also true, that as no other Operation, so also no Sensation can be without Contact Corporeal or Spiritual. Now wheras all Sensation is performed in the Brain, it is somwhat strange to conceiv how any Sensible Object, yea the most Pure and Spiritual, should arrive thither through all the Body, and the Nerval *Succus*, and all the Mæandrous Passages therof; which certeinly is not by the Bodys therof,

therof, that can not so penetrate and pass, and if they should, would rather disturb and confound the Brain; nor by any *Effluvia* therof, which are also Bodys, though more Rare and Subtile; nor only by their Emanations, for not only Sapors, and Odors, which are Effluent, and Light, and Heat, which are Emanant, but Cold, and Drines, which are not Effluent, nor yet discovered to be Emanant, or very litle, are Sensed; and so also Sound, which certeinly is neither Effluent, nor Emanant, but Transient: but the Sensible Objects cause Sensation by Actuating their like Qualitys in the Body, or some fitt and Immediate Standard therin, as I shall now shew, and not by Motion and Pulse of the Brain, as I shall shew heerafter; nor by any such Gross and Corporeal Contact, or less Spiritual way, but such as is the most Pure and Spiritual, wherof any Elementary Nature is capable, that is, by those very wonderfull Animal Spirits in the Nervs, as most Similar and fitt Instruments of the Sensitive Spirit, and which, as I conceiv, are severaly prepared in the several Nervs by the Vegetative Spirit, that doth so Effigiate and Qualify the External Organs, and also these Internal Instrumentalitys, whereby all the Nervs are furnished and instructed with their proper Spirits; and then the External Object or *Species* therof Operating upon the Standard by Univocal Generation of like Qualitys, and they touching upon the Nervs, do Irradiate, Excite, and Actuate them; whereby they having the Types therof alway Potentialy in themselvs, like a Needle touched with a Magnet, are suddenly, but not Instantaneously as is supposed, quickned, and enlivened as it were, from that very Contact to the Brain. And this is evidently seen in Juglers Feats of Activity, as they are called, being so very quick and nimble, that they will throw a small black Ball out of one hand into another before your Eys, and yet you shall not see it: and so in the common Experiment of a Firestick moved swiftly round, which seems to make a Firewheel or whole Circle therof, though certeinly the Stick be only in one and the same Point in the same Instant: wherefore as the Emanation of Light and Color, though it be most swift and Momentaneous, yet is not Instantaneous; so much less the Sensation of Sight, which requires some time, for the *Species* not only to pass from the Contact to the Nerv, but also to Irradiate and Excite the Animal Spirits therin; which plainly are so Excited

and Actuated thereby in the Nervs, becauſ when the Fireſtick paſſeth away from one Point to another, yet the Ey ſeeth it in that Point from which it hath paſſed, untill it return thither again through the whole Circle; wheras the Emanant Ray of the Light of the Fire always is; and paſſeth away Simultaneouſly, with the Inherent Light in the Body of the Fireſtick: and therefore the *Species* in the Nervs, while it is newly Irradiated and Actuated, is more ſtrong and vivid then afterward: but the Ray being paſt and gone, the Viſion cannot be Immediately by that, but muſt be by ſomething more Immediate, which, as I ſuppoſe, can be none other then what I have aſſigned; that is, the Irradiating Actuacting and Evoking of the Viſive Animal Spirit, and the like *Species* therin by the Senſible *Species*; as the Sun by Illuſtrating the Moon doth Actuate and Evoke the Native Light which is Potentialy in the Moon itſelf, as I have ſhewed: and this Senſation of the Senſes, which is by the Inſtrumentality of the Senſorious Nervs, is that firſt Senſation, wherof I diſcourſed before, whereby a Man ſeeth another Man Directly, or his own Face in a Glaſs Reflexively; and which is therefore ſo Bright and Vivid, becauſ the Irradiation, and Actuation is Immediately by the Contact of the Real Senſible itſelf; wheras the other, that is by Imagination or Contemplation of Phantaſms in the Animal Spirits in the Brain, is but as a Spectre or Apparition in reſpect therof, becauſ it hath no ſuch Irradiation by the Object itſelf, but is only Actuated by the Vegetative Spirit, and then Irradiated by the Imagination, as I conceiv; becauſ as the Senſitive Spirit cannot Immediately Conſubſtantiate the Elements without the Mediation of the Vegetative Spirit, ſo neither can it Operate without the Mediation therof: for as things are in Being, ſo they are in Operation; as plainly the Intellective Spirit of Man in this Conjunct State cannot Operate without the Mediation of the Senſitive Spirit; and ſo of the reſt, according to the Scale of Nature. Alſo I conceiv that wheras this Operation of the Senſes, which is by Elementary upon Elementary, that is, of Senſibles upon the Animal Spirits, is by Immediate Contact of the Senſibles; and ſo Light enters into the Ey, and Sound into the *Tympanum* of the Ear, and Odors into the *Nares*, and Sapors into the Subſtance of the Spongy Tong, and the Fleſh and whole Temper of the Body is the Standard of Feeling: for

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unleſs we do admitt Emanations of Cold, Moiſture, and Drines alſo as well as of Heat, I cannot conceiv how the Object itſelf and the Tactive Nervs can come together, whereby there may be any Contact between them, without which certeinly there can be no Operation; for when I touch a Cold Stone with my Finger s ends, or other part of my Body; there are ſome Cuticles, if not Fleſh, between it and the Tactive Nervs; ſo that there cannot poſſibly be any Contact: nor can the Inherent Cold in the Stone paſs through the Pores unto the Nervs any more then the Stone itſelf, in which it is Inherent: and though it is true, that if a very fine Linen Cloth be girt hard and ſmooth about a poliſhed Agat haft of a Knife, and a live Coal laid upon the Linen Cloath, it will not eaſily burn it, being defended by the Cold Agat; and ſo there may be ſome ſuch ſhort Emanations of thoſe Qualitys, which are therefore leſs noted, then of Heat, and Light, and the like, which are ſo longinquous, and thereby more notable; yet I conceiv that the Immediate Contact is between the Fleſh and Nervs. And it is to be obſerved, and well examined, what others affirm, that there may be Motive Animal Spirits, and yet no Tactive Spirits in the ſame Nervs; and there are Hiſtorical Inſtances of ſome ſuch men who could work with their hands as well as ever, and yet not feel, though they were pinched, pricked, or cutt; which I cannot deny, according to my former *Hypotheſis*: for ſo I ſuppoſe, that ſeveral Animal Spirits being only Spiritual Qualitys, may be in the ſame Nerval *Succus*, and Subſtance, *per omnia*; and therefore alſo one kind therof may Actualy be without the other, (as Actual Heat without Light); but then I ſuppoſe, that the Senſ of Feeling being Fundamental, there cannot be any other Senſorious Organ and Nervs in the Body of any ſuch man, without it, as the Eys, Ears, *Nares*, Tong, and the like. And it is alſo to be Inquired, whether in ſuch a Body the Fleſh, which is the Standard, be not mortified or benummed? and then there can be no Senſation, though the Tactive, as well as the Motive Spirits, be found and perfect in the Nervs: and the conſtant Temperament of the Fleſh, though it be alſo a Miſture of the fower firſt Qualitys, is not felt, becauſ it is ſo Equal, and Natural, that it is alſo ſuitable to the *Craſis* of the Body, and likewiſe of the Nervs, and Tactive Spirits therin, and ſo doth not Offend, or any way

Affect

Affect them, whereby there should be any such Feeling therof, as when it is any way Distempered; and as we feel any Excess of Heat, Cold, Moisture, or Drines, in the Flesh itself, so if any other Tactible Object, which is External, be Unequal and Excessive in any of those Qualitys, or otherwise not in every respect of all other Sensibility such as is in the Flesh itself, it doth more or less Offend or Affect it whereby it is felt; and so the Temperament of the Flesh is the Standard, which is varied by the Univocal Generation of any such Sensible Qualitys therin, which Immediately touch upon the Nervs, and from that Contact, and Irradiation of the Animal Spirits in the Nervs, the Sensibility passeth to the Brain, where the Sensation is performed. Thus Sens, which is itself a Spiritual and Living Faculty, requireth its own more Immediate Standard, and most Refined Spiritual Qualitys, or Animal Spirits, and the Spiritualy Plastical Virtue of the Vegetative Spirit, in the spiritual Operation of any Sensation; as I have shewed in this Sens of Feeling (which is most Gross, and more Corporeal then others) and shall farther shew in all the other Senses, and their Sensations. The next Sens to Feeling is Tasting; which therefore some have supposed to be only another maner of Feeling; and it is indeed by Immediate Contact between the Sapid Juice and the Tong, which hath also a *Saliva*, that is, the Standard therof, being in itself Indifferent to any Sapor, but when it is Infected by the Sapid Liquor doth convey it to the Gustative Nervs, whereby the Sensation is performed, as I have shewed: Yet certeinly, as Sapor is a different Sensible from all or any of the fower first Qualitys (though there be some Mistion therof in the Juice, that may be felt by the Organ of Tasting, which is also Tactive, by another Sensation) so is Tast a different Sens from Tact: and though all the Body doth Feel, yet it doth not therefore Tast, but only the Tong, or Palat, and this Sensation is most Sensitively and exactly performed by the *Cuspis* of the Tong, where the Gustative Nervs meet together; as the Tactive do in the Fingers ends of a Man, or Tail of an Eel: and in the whole Tong there is as it were a Source of Moisture, keeping it alway Moist, and ready to issue forth, to temper any Dry, and convey any Actualy Moist Sapors to the Nervs: and if the Sapid Meat or Drink be not in the Mouth, but distant from it, yet the Appetite doth stirr up Salivation,

livation, which is prepared to receiv it: whereby we may observ that Combination and Confederacy between several Natures which I have often mentioned, and which is indeed the true Sympathy, and the contrary therof the true Antipathy in Nature. The next Sens is Smelling; which also is as like to Tasting, as Odor, which is the Object therof, is like to Sapor, which is the Object of Tasting; and as Sapor is in the grosser Liquor, and Odor in the Vapor, so I suppose, that there is some Inodorous Vapor in the *Nares*, or Mammillary Processes, which is the Standard of this Sens of Smelling, as the *Saliva* is of Tasting; though it is more Subtile, and not so Discernible: and though perhaps the very Body of Vapor may pass into the Brain, and though also Sensation be, as I said, in the Brain, yet I do not conceiv that there is any Smelling thereby, and more then when Odorous Vapors descend into the Stomach, but that this Sensation also is performed like all the rest; that is, the Odorous Vapor entring into the Tonell of the *Nares*, and passing thereby to the Mammillary Processes, is there mett and received by some such Mammillary Vapor or Exudation, and so conveyed to the Olfactive Nervs therin, and thereby to the Brain, where the Sensation is performed, by this way only, and not by the other without it. Nor are the *Nares* the Immediate Organ of Smelling, but only the Tonell, as I said, to convey the Odorous Vapor to the Mammillary Processes, which are the very Organ therof; as all the Senses, except Feeling, (wherof the Organ is the whole Body) have, besides their several External Organs, such *Atria* or *Avenues* to conduct the Sensible unto the Sensorious Nervs. So the Mouth is a Cavern, and the *Nares*, as I said, are a Tonell, and the Ears Anfractuous Passages, and the *Uvea* hath a *Foramen*, beside the Spherical Figure of the Ey, which causeth the Rays to Converge toward it. Also it is observed, that as Vegetative Nutrition is performed in the lower Coquine of the Stomach, so Sensation is in the *Capitol* of the Brain; and the Organs of the Superior and more Excellent Senses are higher and neerer to it. Thus Feeling is principaly by the Fingers, and the Tong is higher then them, and the Mammillary Processes above that, and the Ears above them; and the Eys above them all. Also the Ears are double; not only as the *Nares*, which are Bipartite (having a Bridg to strengthen them being such a Prominent part, and chief Ornament of the Face, and both their *Foramina* meet again above it)

but ſtanding aſunder on each ſide of the Head, to receiv Sound, which is Circumferentialy diffuſed: And ſo there are two Eys, to receiv Light and Colors: and this double proviſion is made for theſe two Scientifical Senſes, ſo as their Senſations may be performed by one alone without the other, though not ſo completely; for as by ſhutting one Ey, and contracting the *Uvea* of the other, we ſee more diſtinctly, ſo we ſee leſs of the Object in Latitude; and common Sight is by both Eys together; ſo that if an Object be placed at the tip of the Noſe, you cannot well ſee it with both Eys at the ſame time; becauſ both of them moving together, as one turns toward it, the other turns from it; wheras, if the Object be more Remote the Rays come more equaly, and leſs tranſverſly, to both the Eys. Yet though Hearing and Seing be ſuch high and noble Senſes, they are not performed in the Brain only, like Imagination, and Appetition, but have their more External Organs, and Standards: for ſo Hearing needeth Ears; and there is alſo an *Aura* in the *Tympana*, which is a Pure, Calm, and Silent Air, included in them, wherunto the External Sound approaching, doth propagate an Internal Sound in it, as in the Standard (wherin all Sounds were before Potentialy, as well as in the open Air) and the Sound is Spiritualy propagated in it, as in the open Air, as I have ſhewed; and not by any new Colliſion or beating on the *Tympana*, as hath been ſuppoſed. And ſo Sight hath not only its External Organs, the Eys, (which have a very quick and tender Feeling, and are very curiouſly compoſed) but alſo a Standard therin, as I ſhall now ſhew. Certeinly Sight is not by any ſuch Intentional *Species* Emitted, as the Antients ſuppoſed; for the Eys, as well as the Organs of all the Power other Senſes, are made more fitt for Reception then Emiſſion; and the Light, which doth Irradiate the Colorate Object, doth manifeſtly with its Reflected Rays bring back the Actuated *Species* therof to the Eys, and ſo Intromitt them; and therefore there is no need of any ſuch Extramiſſion; though indeed in Seing we ſeem to ſee the Object Outwardly, where it Realy is, rather then Inwardly, where it is not: which, I ſuppoſe, was the ground of that Error: wheras it is the Senſ within, which doth behold the Object without, by Conjunction of both the Internal and External Lights, as I ſhall ſhew afterward. Wherefore others conſydering that the External Light doth penetrate the whole

Ey,

Ey, even to the *Retina*, and *Fundus*, have perſwaded themſelvs that the Viſion is there performed: but then we ſhould ſee *Viſu Inverſo*, Backwardly, and not Forwardly, as indeed we do: and becauſ the Rays do Interſect in the Ey above the *Fundus*, wherin they are Inverted, we ſhould ſee the Image of the Object *Situ Inverſo*, as indeed we do not. But I conceiv the true maner of Viſion to be both by Intromiſſion of the External Light, and Extramiſſion of an Internal Light, meeting therewith in the Ey, though not paſſing out of it; whereby the *Species* of the Object is doubly refined, that is, firſt by the External Light Irradiating it, and Abſtracting from it the Colorous *Species* (which are not Emanant of themſelvs, nor Senſible, as Emanant Heat, but muſt be thus firſt Purified and Abſtracted by the External Light) and then again the Internal Light in the Ey meeting it, and being Irradiated and Affected thereby, as the Standard of Sight, hath its own Potential *Species*, which are yet more Pure and Spiritual, Actuated in itſelf; as well as in the Standards of all the other Senſes, as I have before ſhewed. And this meeting or Conjunction of both theſe Lights, is, as I ſuppoſe, in or about the Cryſtalline Humor, which Phyſicians rightly term, *Speculum Oculi*; though we do not ſee the Image therin Reflected from the *Retina*, and *Fundus*, where it is Inverted; for then again we ſhould ſee it Inverted: but we ſee it foreright and Direct, according to the Refracted Rays of the External Light Intromitted, and Extramiſſion of the Internal Light, there meeting with it, as I have ſaid; as when we look through Perſpicills or Spectacles: and though indeed in a *Speculum* which is Plane or Convex, as the Cryſtalline Humor is, we ſee the Reflected Image foreright and Direct, according to the Natural maner of Viſion; yet we ſee it as the Object itſelf is, and not Inverted, as we ſhould by ſuch double Reflection, as I have ſhewed: and ſuch double Reflection would too much weaken the *Species*, and hinder Viſion. Now that there is ſuch an Internal Light, which being Incolorous in itſelf, is the Standard of Sight, as I have ſaid, is acknowledged by Phyſicians, who call it the Bright Spirit of the Ey, which though in a dead Ey it be extinct, and doth not appear, yet is manifeſt by the great difference heerin between a living and a dead Ey: and you may eaſily deprehend it in your own living Ey, by depreſſing and diſtorting the Vitreous Humor in the hinder part therof,

whereby you shall perceiv a Golden Ring of Light, with a dark *Meditullium* in the midst therof; which will not so appear by depressing and distorting the Aqueous Humor in the forepart of the Ey, wherin this Internal Light is not, but in the Vitreous Humor; which is next to the Optike Nervs: and by such depression and distortion, as also by any great blow upon the Ey, it is Conspissated, and rendred Visible; yea the Sun, or any vehement Lucidity, if you behold it long, will so Irradiate and Actuate the Internal Light, that it will not soon be extinguished afterward: which also plainly shews, how External *Species* of Sensible Objects may Irradiate and Actuate the Internal, as I have said, so as they shall continue some time after the Objects themselvs, and their *Species*, are removed. And the dark *Meditullium* is the Crystalline *Lens*, which by such depression and distortion of the Ey is rendred Visible, though otherwise it be only the *Diaphanum* of the External Light, and as it were a *Speculum* to the Internal Sight. Having premised this *Hypothesis* of the most Natural and Direct way of Vision, I recommend it, as I do all others, to more Exact and farther Examination: and as I have formerly presented Optike, as a very Scientifical Study, or Philosophical Light, I shall heer transgres the bounds of a general System, in some more particular Observations, and Physical Conceptions therof; becaus indeed I find Optike so much mistaken by others, and made a particular Mathematical Science; though it be no more Mathematical, then Astronomy; which certeinly is distinct and very different from Geometry, or Uranometry, which is only assistant and subservient unto it. So though Actinometry be assistant and subservient to Optike, becaus the Rays from Point to Point pass, as I have said, in most direct Mathematical Lines, yet the Inflection therof at the Points, either by Refraction, or Reflection, which is properly Optical, is purely Physical and Spiritual; and not so well understood, and therefore commonly pretermitted: but though the Spiritual Nature therof be very various and may seem to be contrary; yet that is from contrary Reasons, which, if rightly understood, will be found most Regular and Proportionable in that very variety, and contrariety. The Light, which is not Corporeal, but Spiritual, as I have shewed, is *Actus Visibilis, & Diaphani*; and is Naturaly of itself Emanant from the Center of Inherent Light to the Circumference of the Sphere of Emana-

Emanation; which is the Sphere of its Activity; but by some contrary Opacity in the more or less *Opacum*, or *Diaphanum*, is more or less Reflected, or Refracted: Yet the Air, which is the Natural *Diaphanum*, and *Medium* of Sight, causeth very litle Refraction, and no Visible Intersection of the Rays; as I have observed of fower several Colors from fower several Walls of a Rome, crossing one another, which yet are seen in any Point of the Room severaly and distinctly, without any Visible Intersection, and Inversion, or Confusion thereby; such as appears in it afterward through Water or Glass, and the like, which are no Natural, but Artificial *Media* of Sight; and in both we see not by any Intersecting Rays which pass over the Ey. And though Air be much more Dens, yet perhaps not much more Opacous then Æther, but is as a *Medium*, neither Lucid, nor very Opacous; and I suppose the Opacity that is in it, is more from the Waters above, or Vapors, then from itself, which is an *Expansum* as well as Æther: and it is Opacity that Refracts, and Reflects, more then Density, as Ink doth more then other Water, or Glass, though as Dens and Heavy. Thus I conceiv the reason, why the Sun, or full Moon, rising, or setting, seem so much greater, to be from the Vapors in the Airy Atmosphere (as a small Vessel at Sea, in Misty Weather, will seem as bigg as a greater Ship, in Sude Weather, at the same distance) and the Prospect of them Horizontaly through the Vapors may be as farr as a Line of Vision from them to the Ey may be tangent on the Globe of the Earth: and this also makes them seem more Red, by Local Union of their Rays of Light with the more Opacous and Dens Vapors: as if you hold Leaf Gold against the Sun, and so look through it, you shall see it Green, by the Union of its Yellow with its own Opacity and Density: but the Sun at Midday, and Moon at Midnight, are seen less, and more bright; becaus the Prospect of them then is through a less space of the Vaporous Atmosphere, which is not so great, as the Sensible *Horizon* of the Earth; and as the Vapors ascend higher, they are less Opacous and Dens; as appears by an open Weather-glass, at the bottom, or top, of a Steeple: and a Man, standing on the top of a Steeple, seems less, then at the same distance on the ground; which is partly from the same, and partly from another reason; becaus we see him Perpendicularly on the top of

the Steeple, and more Hemiſphericaly on the ground; as if we look from the bottom of a Steeple Perpendicularly to the top ther-of, it will ſeem ſhorter, and neerer, then if we ſtand at a like diſtance from the bottom, and behold it more Hemiſphericaly; which is the Natural maner of Viſion, as I ſhall ſhew heerafter. Again, as the Sun at Midday may be wholy Obnubilated by a thick Cloud, and not ſeen at all, ſo he may be ſo partly Veiled by a more thin Cloud, that we may ſee his Disk, but leſs then when we ſee him in a clear Sky, with the *Halo* and Luſtre of his Rays about him. And thus *Venus*, or *Mercury*, or other Starrs, riſing, or ſetting, may appear leſs; becauſ their leſs Lights are partly ſo Veiled, though not wholy Obnubilated, by the very Vaporous Atmoſphere: for according to the ſeveral Degrees of the Opacity and Denſity of the *Media*, and more or leſs Lucidity of the Objects, ſo they are ſeen greater, or leſs, reſpectively and proportionably. And thus not only External, but alſo Internal Vapors, as in Drunken men, may Magnify Objects. But there is a very great Refraction in the Organ of the Ey, which is therefore ſo compoſed, to temper the vehement Lucidity of the Rays; and alſo by that Refraction, the Rays Converge, and are Contracted, in and by the Spherical Figure of the Ey, whereby the greateſt Objects may be ſeen in ſmall. And as there is no Viſible Interſection and Inverſion in the Air (as Babys in the *Cornea*, which are Erect Images, and not Inverted, do plainly ſhew) ſo neither in the Ey itſelf, after the point of Incidence in the *Cornea*, where the Rays are ſo Reflected; and alſo paſs through it and the *Foramen Uveæ*, into the Cryſtalline Humor, whereby they are Refracted, and Converge, untill after and beyond the Point of Exidence; from and out of which they Interſect, and are Inverted, as I ſuppoſe, in the Vitreous Humor: for the Aqueous Humor is as a Convexoconcave Glaſs in itſelf, whoſe Convexity doth cauſ to Converge, and Concavity to Diverge; and being Contiguous with the Cryſtalline *Lens*, they are Opticaly both as it were one Continuous Glaſs, or the like, with ſome ſmall difference between them; that is, the Cryſtalline is ſomewhat more Opacous and Denſ, and ſo may Refract, and cauſ to Converge ſomewhat more, and to Interſect ſomewhat ſooner: and we may beſt conceiv of them both, as of a Globule, or rather *Cylinder*, of a Glaſs Veſſel, whoſe upper part is filled with Water,

Water, and lower part is solid Glass, and having the upper Extremity more Convex then the neather: and I conceiv, that Rays transmitted through such a short *Cylinder* will not Intersect, and be Inverted, within the Body therof, but beneath, and after the Point of Excidence, in the neather Extremity therof; (and in the *Cylinder* itself are only proportionably Inflected and distended) as if you look through a round Glass Vessell filled with Water (and, if you pleas, also let down a *Lens* into it hanging by a string) and place the Flame of a Candle before it, and then apply your Ey behind it, you shall see the Image of the Flame Erect, and not Inverted; though it is true, that if you look behind the dead Oxes Ey, in the *Foramen* of a dark Room, you shall see the Image of the Object Inverted; becaus you look behind the Vitreous Humor therof, wherin I suppose the Intersection and Inversion to be; and probably in or about the Center of the Ey, which may be below the *Superficies* of such a Sphere, wherof the *Gibbus* in the *Cornea* is a Portion or Segment; and I conceiv, that the Irradiation and Actuation of the *Species* in the Internal Light, by the External, and Conjunction therwith, is before the first Intersection and Inversion of the Rays therof in the Ey; becaus we thereby see the Image of the Object Erect, and not Inverted; and the Internal Light, being so Irradiated, and having its *Species* already Actuated in itself, by the Conjunction with the External Light, is no farther concerned therin, nor in the Intersection and Inversion therof afterward in the *Retina*, then in the Babys in the *Cornea*; and that it seeth nothing behind it, or backward, but only forward; which is the very Natural way of Vision; and the Immediate Vision is by its own *Species* so Actuated in the Internal Light, as the Standard; as in all other Sensations, as I have shewed: and as the Aqueous Humor is the Organical and Immediate *Medium*, for the transmission of the External Light, so is the Vitreous Humor of the Internal Light: and as we see nothing in the Air, which is the most Natural and common *Medium*, so neither in these Organical *Media*, ordinarily, and according to Nature; unless they be Violently distorted, or infected. Wherefore we do not see the Image of the Object Inverted, and Reflected from the *Retina*, as I have said: for if we did so, we should also see the *Retina* itself, and Concavity of the Vitreous Humor; as when we see an Image in a *Speculum*, we also

see

see the *Speculum*; or on the white Paper in a dark Room, we also see the Paper, and that part of the Room. Having thus farr consyder the Natural way of Vision, I shall now proceed to consyder Refraction, and Reflection, also in order to Vision: which to explicate Visibly and Ocularly, let Experiment, therof be made by Lights of Candles set one neer to another; and first place a Convex *Lens* against the midst of the Candles, at such a distance as we usualy read; and apply your Ey to the *Lens*, as nigh as we do Spectacles to the Eys; and you shall see all the Candles standing asunder, as wide as a Line of the Page of a Book, and somwhat greater, but not altogether so clear and bright as with the open Ey, as we do thus see by reading with Spectacles. Of which Invention this is the use and benefit, that though they make the Letters to appear somwhat more dim, yet in reading small prints, it is recompensed with the advantage of making them them to appear conveniently great; wheras they are not so usefull in beholding greater Objects, or at a farther distance: and probably *Presbytæ*, or old men, who need Spectacles, have their Eys, or Crystalline *Lentes*, too much depress't, or otherwise so figured, whereby the Intersection, and *Focus* of the Rays, is to farr below in the Vitreous Humor; for the best Vision is neither too neer to the *Focus*, or Concourse, where the Confusion is; nor too farr from it, where the *Species* are less, as I shall shew heerafter. Then if you draw back your Ey from the *Lens*, being held at a convenient distance between the Candles and your Ey, you shall see only one Candle, and the Flame therof greater and greater, and more and more dim, untill you come to the *Focus*; becaus the Rays, being Refracted through the Convex *Lens*, do Converge to the *Focus*, and the Rays of the Collateral Candles first Intersect, and pass over the Ey and Crystalline Humor; and so, not meeting with the Internal Light, are not seen; but the Rays of that Candle, which is seen, being more Perpendicular, pass into the Ey and Crystalline Humor, whereby it is seen; and they alone so passing into it, and being distended by the Refraction, are Diluted and weakned, and become more dim; and also by their Distention, their Objective Base is enlarged, and the Sight of them is under a larger or greater Angle of Vision, whereby they seem greater, as I shall shew heerafter. And at, and about the *Focus*, where the Visible Intersection is in a very odd maner, as I

shall

shall also shew heerafter, there is a Confusion of the Rays, and no distinct Image of the Flame, but only a glaring Light. And as you draw your Ey farther back from it, you shall begin to see the Image Inverted, and proportionably as great behind the *Focus*, as before it, and so less and less, and more and more distinct, untill it begin to be Rotundated into the Spherical Light of the Rays, and so disappear and vanish away into them. Again, if laying aside the Convex *Lens*, you place a Concave *Lens* instead therof, as you did first before, and so look through it, you shall see all the Candles, but much less, and more clear and bright; becaus the Rays, passing through it, do Diverge; and therefore *Myopes* use such Concave Spectacles becaus their Eys, or Crystalline *Lentes*, are too Spherical, or otherwise so figured, as that the Intersection in the Ey is too high in the Vitreous Humor, whereby the Internal Light meeting with the External, in Confusion of the Rays, or too neer unto it, the Concave Spectacles do prolong the Intersection, and make it to be lower, whereby they see more distinctly. And the more you draw back your Ey from the Concave *Lens*, you shall see all the Candles still less and less, from the contrary Reason of Divergence; and very clearly, becaus so many Rays of them all come together into the Ey, and so Illustrate and fortify one another. But there is no Intersection or Inversion seen by looking through any Concave *Lentes*; becaus there is no such Convergence, as by Convex *Lentes*. Thus you may also try by a Covex *Lens* before a Concave, or Concave before a Convex, or with a Convexoconcave, Planoconvex, or Planoconcave *Lens*, or with Globules, or Prisms, or the like, as you pleas; whereby you shall better satisfy your self, then can be expressed in any Diagramms. And particularly, you may try with the Perspective Tube, or Telescope, which was the happy Invention of all the advantages of seing at a great distance, and whereby all the disadvantages are mutualy remedied; that is, the Convergence of the Rays doth Magnify, and enlarge the Objective Base, according to the proportion of those few Rays, which arrive to, and meet with the Internal Light; and the Divergence therof again, before the Intersection, doth also widen the Angle of Vision, and render them more Parallel, and Direct; and as the Perpendicular Ray itself, or *Axis* of Vision, so all Collateral Rays, as they are more Pependicu-

lar, and leſs Oblique, are more Viſible, ſtrong, and clear. Again, let the Planoconvex, or Planoconcave *Lentes*, be lined, behind on the Plane ſide, with black Paper, or the like; and firſt place the other ſide of the Planoconvex *Lens* toward one Candle, and you ſhall ſee the Principal Image of the Flame, which penetrates the Glaſs, leſs; and, as you draw back the *Lens*, ſtill leſs and leſs Reflected from the *Fundus*, or black Paper, and Erect; though there may be alſo (eſpecialy if you hold the *Lens* ſomwhat Obliquely) another Image therof, Reflected only from the *Superficies*, and dancing about it; which will be Inverted, as I have ſhewed: and the Erect Image in this, or any Plane *Speculum*, though the Profundity therof be very litle, ſeems to penetrate it as much forward, as the Object is backward, or behind the Ey; for the Natural way of Viſion being, as I ſaid, foreright, we ſeem to ſee the Reflected Images of Objects behind, as if they were before, and as farr before as they are behind, or proportionably according to the Poſition of the Ey between the *Speculum* and the Object: for we Immediately ſee the Image, and the Object Mediately by it: and yet as it penetrates the Diaphanous *Speculum*, and is Reflected from the *Fundus*, we ſee it accordiag to the Longitude of the Ray Reflected from the Object to the *Speculum*, if the Ey be neer to it, becauſ we alſo ſee the Object Mediately by it. Alſo the penetration of the *Speculum* by the Ray is conſyderable; for if it be too Profund, it doth not only diminiſh the Viſible Longitude, but drown the Brightnes and Color of the Image; as if you look into a deep Water, you ſhall ſee only a dark Shadow of your ſelf; wheras in a more ſhallow Water, you may ſee more bright Colors of the Reflected Image; but I ſuppoſe the dark Shadow which appears in more deep Water is, becauſ the Brightnes is Extinguiſhed thereby, and the Rays which penetrate it, are drowned in it: but if the Object be Lucid, as the Flame of a Candle, or Sun, Moon, or Starr, they may appear otherwiſe; becauſ by their great Lucidity they overcome the Opacity and Denſity of the deep Water. Alſo it is to be obſerved, that the Object at the Bank or *Limbus* of a River or *Speculum* is ſeen Inverted, according to Longitude; becauſ the feet, which are next to it, are ſeen upper, and the Head, that is farther, is ſeen neather; and as your Ey draweth neerer to the Object, or that to your Ey,

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ſo it will appear more and more Erect: but it is never ſeen Inverted, according to Latitude, as in a Concave *Speculum*, whereby the Right ſide ſhall be ſeen Left, and the Left Right. But if you take away the Planoconvex *Lens*, and inſtead therof place the Planoconcave *Lens*, ſo as before, you ſhall ſee the Object, if you look very neer, much Magnified, by the Divergence of the Rays therof; and, as you draw it farther back, leſs and leſs. Alſo as before, in the very *Fundus* of the Concavity to which the Rays paſs more Directly, and where they ſo penetrate the *Speculum*, as well as if it were Convex, or Plane, you may ſee one Erect Image; wheras, if the Concave *Speculum* be not Diaphanous, but Opacous, and only Polite, as of Steel, or the like, you ſhall ſee no ſuch Erect Image therin; but only Inverted, ſo as you ſhall ſee others Reflected only from, and dancing about the *Superficies* of the Concave *Speculum*; becauſ they do not penetrate the *Diaphanum* therof, but being Reflected firſt from the *Limbus*, and back again from the ſides to the Ey, are thereby Inverted, as I have ſhewed. And if you behold the Inverted Image in the Concave *Speculum* Obliquely, it may ſeem to come toward the Ey; becauſ it doth not penetrate, and paſs forward, as the Erect Image; but you ſhall alway ſee it before, and never behind, though the Object be behind you. Thus as there are Primary and Secondary Rays of Light, as I have formerly ſhewed, ſo alſo *Species* of Colors, or Images; that is, the Primary *Species* are of Fixed Colors, which are ſeen Objectively, as they are, and where they are, (if there be no other Impediment); and the Secondary *Species* are of deſultory Colors, or Images, whereby the Objects are ſeen as they are not, and where they are not, according to the variation of the Rays, as I have ſhewed. But as we ſee no Images in the Natural *Medium*, as Spectres in the Air; ſo neither in the Natural Organ of the Ey, unles it be violently diſtorted, as I have ſhewed, or be infected, as with the Jaundiſe, or the like, or have Motes and Suffuſions in it, wherof the Erect Images do appear foreright without the Ey, becauſ they penetrate the *Apex* of the Concave *Cornea*, like the Erect Image in the *Fundus* of a Concave *Speculum*, as I have ſhewed. And now I ſhall proceed farther to ſhew the Differences between Refraction and Reflection; and how Viſion is Immediately by Refraction, and only Mediately

by Reflection of Rays, or Images: for Refraction is more Instrumentaly Visive, according to which we see through the Organ and *Medium* foreright, but Reflection is more Objective, according to which we see the Object by the Reflected Image therof Forwardly, but never Backwardly, as I have said. Refraction, as is commenly observed, if it be through a more Opacous and Dens *Medium*, is *ad Perpendiculum*, according to the Point of Incidence; and through a less Opacous and Dens *Medium*, it is *a Perpendiculo*, that is, its own Perpendicular Line, according to the Point of Excidence; and so the Rays, though they Diverge from their own *Perpendicula* according to the Points of Excidence, yet Converge to the common *Perpendiculum* according to their Points of Incidence; whereby after they have passed through the more Opacous and Dens *Medium* into the other, which is less Opacous and Dens, they Intersect and are Decussated forward, as Reflected Rays do Intersect and are Decussated backward: for so the several Lines of Incidence Intersect, and are Decussated through their several Lines of Reflection; but then the first Reflected is Interfected by the second Incident Ray, and so in order one after another (as we may conceiv therof, though in truth it is the Continuous Flux of Light, as I have said, which is Reflected after such a maner; otherwise we should see the Reflected Image only as so many several Points, such as children prick out to make Faces in Paper, and not as one Continuous Picture) wheras in Refraction, whereby the Rays are not terminated and reverberated, as by Reflection, but only Converge, and so pass forward, the two utmost Oblique Rays first Intersect one another, and so the next, and the next, in an odd maner; and somwhat like to Lines of Contingence, or such as are Tangent upon the several Points of a Sphere. And now again, for more sensible Explanation, Let a Convex *Lens* be placed against the Flame of one Candle, as before, (whereby the Intersection may be seen on a white Paper) and let the Paper be so placed as to receiv and Reflect it (which may discover all these Optical Experiments, as well as if they were made in the dark Room, for the reason is the same, and though the Room be not so dark, yet the Flame being so very Lucid doth sufficiently manifest them) Thus if the *Lens* be somwhat neer to the Candle, and the Paper to the *Lens*, you shall see first a glaring Light, and

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Confusion, by that odd Intersection of the Refracted Rays, Converging, and passing through the *Lens*, and then Reflected on the Paper: and as you draw the Paper farther back from the *Lens*, you shall begin to see a greater Image of the Flame Inverted, and so less and less, untill you see it least; and then it is most bright and vivid, by Conspissation of the Rays: wheras if you look through the *Lens* with your Ey at such distances, you shall first see the Flame Erect, and greater and greater, untill you come to that distance where it was least on the Paper; and there looking through the *Lens*, you shall see the glaring Light and Confusion; whereby it plainly appears, that Sight, which is by such looking through the Ey, forward, and not backward, is not by Intuition of the Reflected Image in the *Retina*, but by the Direct *Species* of the Object Refracted through the Crystalline *Lens*; otherwise we should see the Object least, where we see it greatest: and though the Image be Inverted in the *Retina* after the Intersection, yet the *Species* is Erect in the Crystalline Humor, before it; whereby we see the Object Erect, as I have shewed. And as I have formerly observed, so it may appear by the Image Reflected on the white Paper, that the farther the Object is from the *Lens* before it, the neerer is the Intersection behind it, and the neerer the farther; and the more Convex the *Lens* is, like the Crystalline Humor, the difference is the less; and it is greatest at first, and less afterward; so that there appears no great difference in the distances of the *Focus* of the Sun, and Moon, through the same *Lens*, Reflected on a white Paper, though the distances of the Sun, and Moon, themselvs, be vastly different; and though their several *Diameters* also be as different, yet there appears litle difference therof in their *Foci*; whence some usefull Observations may be collected, which I leav to Astronomers; and shall only Opticaly observ, that where the Object, and consequently the Intersection in the Ey, are at the fittest Distance, there is the *Meta* of Sight, and most distinct and clear Vision; which also varys according to the several Figures of several Eys, and neerer or farther to or from that *Meta*, we see less distinctly and clearly, as I shall shew afterward. Again, if you take away the Convex, and instead therof place a Concave *Lens*, as before, between the Candle and the Paper, you shall begin to see an Image of the Flame Inverted, but less then

through the Convex *Lens*, and not Erect, as through the Plano-concave *Lens*, becauſ the Refracted Rays Diverge both ways through this Ambiconcave *Lens*, and penetrate through no ſuch *Planities*, nor are Reflected from the *Fundus*, as in the other: and as this Inverted Image appears leſs and leſs, ſo where it is leaſt, you may plainly ſee it environed with a *Halo* about it, which is by the Divergence of the Collateral Rays: and I conceiv that Viſion through a Concave Glaſs is according to thoſe Rays which ſo Diverge thereby, and not according to the litle Image Reflected on the Paper; but I ſuppoſe, that it being Inverted and Interſecting farr neerer then that through the Convex Glaſs, the Rays therof, which are doubly Reflected to and from the *Limbus*, as I have ſhewed, and ſo penetrate the *Fundus*, which is inmoſt, and paſs unto the Paper, where the ſecond Reflection is, do in the Ey paſs over the Cryſtalline *Lens*; and therefore we do not ſee thereby, and theſe are much weaker then the other, in their *Focus*, where they burn farr leſs through a Concave, then through a Convex *Lens*: and ſo are the Inverted Images, which dance about the *Superficies* more feint and weak, then the Erect, which penetrate the Profundity; becauſ ſuch Inverſion is cauſed by double Reflection, which doth weaken, as I have ſaid: wheras ſingle Reflection through the *Lens* doth more ſtrengthen, by Conſpiſſation of the Rays, and that alſo doth make the Inverted Image in the *Focus* Reflected on the Paper very vivid, and more bright then ſuch as dance about the *Superficies* of the Glaſs. But it is plain, that we do ſee through the Concave *Lens* only according to the Diverging Rays, becauſ we do not ſee only the Image of one Object, as through a Convex *Lens*, but very many, and all Erect, and never Inverted: for Divergence doth not cauſ Interſection, nor Inverſion. But generaly after the moſt bright and leaſt Image Reflected on the Paper, either through the Concave or Convex *Lens*, it begins again to be diſperſed and diſappear, by drawing back the Paper farther beyond the *Focus*, and ſo to Rotundate itſelf, by returning to fill the Natural Sphere of Light, though the Flame of the Candle be Pyramidal. Alſo it is generaly true, that all Refraction, by paſſing through that contrary Opacity and Denſity of the Diaphanous Body, though it doth penetrate, and partly overcome it, yet doth alſo ſo farr thereby diſtend and dilate and weaken the Re-

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fracted Rays; and by that Union with the Opacity and Denſity, the *Diaphanum*, with the Light in it, is rendred partly Objective and Viſible, and *quaſi* Colorous: but Reflection of Rays, which do not penetrate the *Superficies*, or not very farr, but are terminated thereby, and made to Converge, or Reduplicated, doth Illuſtrate and fortify them; and therefore no Convex burning glaſs can be made to burn ſo ſtrongly, as a Parabolicaly Concave Steel Polite; wherin, as there is no ſuch diſadvantage by Refraction, ſo there are the advantages both of Reduplication, and alſo of Concurſion of the Rays to a Point. Now I ſhall conſyder Latitude, and Longitude of Viſion; which though they are alſo Optical, and not only Mathematical, yet they are Opticaly proportionable one unto another, and both with Magnitude. And I ſuppoſe that as the Light is Naturaly Spherical, and that part of the Ey, whereby we ſee forward, Hemiſpherical; ſo alſo that Sight is according to an Hemiſphere, or ſome Segment therof; and that, as a *Lens*, which is the Segment of a larger Circle, though it be therefore greater Mathematicaly, yet is Opticaly no more then a proportionable Segment of a leſs Circle; ſo the Objective Baſe of the *Pyramis Radioſa*, whereby we ſee, being, as I ſaid, an Hemiſpherical Segment, though it be of a greater Circle, and proportionably greater, or more Late, yet conteins no more Objects, then of a leſs Circle; becauſ both are proportionably Circular, whether they be Quadrants, or Semiquadrants, or the like, of either Circle: and as the Optical Segment is greater or more Late, ſo the ſame Objects conteined within it are ſeen greater proportionably, then if they be continued within the Segment of a leſs Circle; but heerin the Optical differs from the Mathematical Segment of a Circle; for the Objects are ſeen greater through a more Circular *Lens*, if it be held neer to the Ey, as in a common Microſcope, and proportionably according to the Diſtance, and Circumference of the *Lens*, which muſt be greater and more Late, if it be held farther, as in the Teleſcope; becauſ they are ſeen fewer, when fewer Rays therof paſs into the Ey, and more paſs over; and fewer Rays paſſing into the Ey always make a greater or more Late Optical Segment, and are ſeen as great, as more Objects together within that Segment, when more Rays paſs into the Ey. Alſo the Angle of Viſion, as they term it, is proportionable to the Objective

jective Base; for indeed it is not, nor can it be an Angle of Contingence, nor any perfect Cone (as an Image can never be a Point) but a Conoid, and somwhat Late, proportionably according to the Base of the *Pyramis Radiosa*: and so we are said to see more Objects, under a wider Mathematical Angle; but we see the same Object greater or more Late, under a more Late Optical Angle, or Conoid; according to which we see more Immediately in the Ey itself, which is the Standard of Vision, both of the Color, and also of the Latitude, and Longitude. Also the Longitude is proportionable to the Latitude Opticaly, rather then Mathematicaly; for though a larger Circle hath always a longer *Diameter*, yet as the Optical Segment and Conoid are greater and more Late, so the *Axis* or *Diameter* is shorter; like a *Lens*, which as it hath a more Late *Superficies*, hath a less Profundity: and thus always, when we see the same Object greater, we see it neerer, and less, farther. And becaus the Natural way of Vision is Hemispherical, therefore if we see Perpendicularly, as I said, that is, according to half the Hemispere; as if we lay our Ey on a long Plane Table; or standing on the Shore, behold the Sea; or looking on the side of a Brickwall, behold the white Lines therof; our Vision is disturbed thereby: becaus the other Rays, which do not come to the Ey Hemisphericaly, but rise toward and press upon the Perpendicular *Axis* of Vision, do oppres and disturb it; and so the Object seems to rise higher, as the Sea doth to the Sight one way; and the Rays Converging together toward the *Axis* the other way, seem at length to meet, and terminate the Sight, as the white Lines of the Brickwall. Again in Natural Vision itself, there is an Optical proportion to be consydered, according to the several Figures of several Eys, as I have said; and so the *Meta* of the most distinct Vision is such, as that some read best farther, and some neerer, as *Myopes*, who hold a Book as neer to their Ey as they may; becaus the Object being neerer, the Intersection in the Ey is somwhat farther and lower, as I have said before: and they are thus helped by Concave Glasses, as I suppose, rather then by the litle Image which doth penetrate the *Fundus* therof; though I conceiv that *Presbyte* are helped by the like Image penetrating the Convex Glasses, which they use: but as the Convergence by the Convex

Glasses

Glasses doth help them, whereby certeinly the Intersection is neerer and higherin their Eys; so the Divergence by the Concave Glasses doth help the other, whereby the Intersection in their Eys should be farther and lower; as certeinly their common Vision is very much neerer: and as in Convex Glasses, the utmost Rays, which Converge most, and so first Intersect, do therefore pass over the Ey, and only the Rays of the Image pass into it; so also in Concave Glasses, the inmost Rays of the Image, which only Converge, and Intersect so soon, do therefore pass over it: but I referr this to the consyderation of *Myopes* themselvs, who can better declare the Experiment therof unto us, then we unto ourselvs, who have not their Eys. Yet I may very well suppose that according to the *Meta* of Vision, which is different in several men, according to the different Figures of their Eys, so the Latitude and Longitude of Objects seen at the *Meta* is proportionable Opticaly, but not Mathematicaly: for probably he that sees at the neereſt *Meta*, seeth as many Objects within the Latitude therof; and them Visibly as farr in Longitude, as he that seeth at the farthest, and so proportionably: and so as we all look beyond this *Meta* of the most distinct Vision, we see less distinctly; becaus the Intersection in the Ey is somwhat varied thereby; though not consyderably at any greater distance, as I have said: but I conceiv also, that becaus the Rays which come into the Ey being weaker as they are more distant do less affect the Sight by its own Internal Light in the Standard, therefore we see the Objects less clearly and distinctly; and if they be very Remote, and not very Lucid, we see them very confusedly; and at last not at all; that is, as farr as the Visible Lucidity of their Rays doth pass, and no farther: Thus as there is thar, which I call the *Meta* of the most distinct Vision, so also a *Limes*, or Boundary of the utmost Vision; which if the Objects be only Colorate, as the Earth, and Earthy Bodys, is not many miles distant from the Ey, and as I suppose proportionable to the *Meta:* but if the Objects be more, or less Lucid, as the Sun, Moon, and Starrs, they may be seen proportionably farther: and yet as the Intersection, so the Latitude, and Longitude, is not consyderable at any greater distance: for so if we look on the surface of the Sea, we see the Æther, and Æthereal Bodys therin, not much

greater, nor farther proportionably; but only see the Æther beyond the Sea, as we see Ships at Sea at a great distance, one beyond another, but very neer one to another, though they be farr distant one from another. Also as the Vigor of the Rays is Finite, and therefore less as they pass farther, so is the Strength of Vision itself; and therefore if we look through an open Tube with one Ey, we see the same Object, being but one, more clearly and distinctly, then if we see many Objects with both our open Eys; though we see the one Object neither greater, nor neerer, so as we do through the Telescope. And so though Art may help Nature in one respect, yet it hinders it in another; and therefore also when we see Objects greater, and neerer, through the Telescope, we see them more dim then when we see as great, and as neer, with our open Eys: for Nature is Universaly best in herself, and hath best consulted all those benefits together which she intendeth; as I have observed of the three Quantitys; that what is gained by one is lost in another; and so Madmen are stronger then others, by a sudden and greater Expens of Spirits, but weaker afterward. And such Artificial advantages of Sight are only to be made use of upon particular occasions, and not constantly; for they who use to read with Spectacles cannot well read without them; nor is it good to dilate the Sight in reading by more Light then is needfull, or to strain it in reading by less, or in too small Prints, and the like: and of all others this most Noble Sens doth sooneſt decay, and while we enjoy it, is most liable to Deception, as we term it (though it be rather a Natural Infirmity) becaus Color, which is the Object of Sight, is not Immediately Visible in itself, but by Light, wherof there may be so many several Refractions, and Reflections: and Sensation is Immediately by that which is Immediately produced in the Standard therof, as I have shewed: and so in feeling itself, which is least subject to Deception, yet he that is *Nive perustus* doth not feel the Cold of the Snow, becaus by the *Antiperistasis*, the Flesh of his Body, which is the Standard, is made Hott: and so the Ey seing according to the Rays which enter into it, and not the Object itself without it, though it see that which is the Immediate Object to itself truly, yet it seeth the Object itself falsly; and so if either the Optical *Axes*, or Planes, be varied, we see accordingly;

ly; as if we look upon the same Object through several *Dioptræ*, or distort one of our Eys, whereby there are double Images therof in the Brain, we see it double, though it be single in itself: so if we turn our Bodys round, the Object seems to turn round; or the Object may seem to be round when only the several *Axes* make a Circle, as in the Firewheel: and so also the round Earth seemeth Plane to us, becaus our Ey cannot comprehend the vast Globosity therof while we stand upon it: whereas all these Infirmities may be easily Rectified not only by Faith, and Reason, but by right Sensations: and right Sens is true as well as right Reason, or Faith; and what is true to one of them is true to them all: nor is there any Falshood in them, or Fallacity in Nature, but only Infirmity, or such a Finite Perfection as it is in itself, which we may otherwise Rectify or Correct, ourselvs, by the right exercise of all those Facultys, wherof God and Nature hath made us partakers, to instruct us, and not to deceiv us. Now as these five Senses have their proper Objects, and several Sensibles, as I have shewed; so there are many Common Sensibles, which by them, and together with them, may be sensed; and they are such Common Sensibles, not only becaus they are so sensible by and with others, but also becaus many of them may be sensed by several Senses: as all Quantity, and Affections of the Matter, and the like; and there is indeed nothing in this Spectable or Sensible World which is not sensible one way or other: for so all other things, which cannot enjoy themselvs, were made to be enjoyed by Sensitives, who thus enjoy themselvs, and all other Sensible things; whereby also Intellective Man understandeth Intelligible things in this Conjunct State with his Sensitive Body, as I shall shew heerafter.

IV. Having thus farr passed through the Insensible and almost Inextricable Labyrinth of the Sensorys, I now arrive at the Brain; where, as I said, the Sensation is performed; and which may evidently appear by what I have said, for so this is the reason why Sight by the two Eys, or Hearing by the two Ears, is not double, though the Organs be double, becaus the Sensible *Species* meet in the Brain, where the Sensation is performed: where also, if they do not so meet, the Sensation will be double, as in distorting one of the Eys, as I said; and so if we putt one hand into cold Water, and the other into hott, and the like: and it is well

well known, that if a Nerv be bound in any part of the Body, there is no Senſation by it below, but only above, that is, between the Ligature and the Brain: ſo alſo the *Gutta ſerena*, which is in the Optike Nervs, cauſeth Blindnes, though the Ey, which is the Organ of Sight, be ſound and perfect: and in Seing we ſeem not to ſee any thing Intermediate between the Object and the Brain, but as it were by a continued Viſive Line, or *Radius Opticus*, reaching from one to the other, both through the *Medium*, and Organ. And moſt certeinly all the Nervs are rooted in the Brain, and *Medulla*; and from thence, all the Nerval *Succus*, both in the *Spina*, and in all the Nervs, doth flow forth. Wherefore indeed it was an inexcuſable Error in them who would derive the Nervs from the Heart; though that, as I have ſhewed, by its Motion be the firſt Operator and Refiner of the Sanguineous Liquor; which is afterward Concocted in and by the more Moderate Temper of the Brain, and there firſt made a Nerval *Succus*, and from thence diffuſed into the Nervs, and *Spinalis Medulla*. And ſo the Scripture, which, as I ſaid, ſpeaks Comprehenſively, doth only mention the Heart, as the Original of all Senſation and Intellection: as it doth only mention Bloud generaly, which ſo paſſeth through the Heart, and is afterward diſtinguiſhed into Arterial, and Nerval: and though ſome, (who will, as we ſay, correct *Magnificat*) may cavill and be offended, or judg this Expreſſion to be Popular, yet they ought to conſyder, that ſuch Comprehenſive Expreſſions are not Popular, but exactly true in their Comprehenſive ſenſ: and thus Heart in Scripture is never Contradiſtinguiſhed from Brain, nor to be underſtood ſo as to Exclude, but Include it, as Bloud doth all kinds of Bloud: nor is there therefore any mention particularly of any Nerval *Succus*, or of any Brain, or any ſuch thing in Scripture; becauſ according to the Language therof, ſuch general Names, as Bloud, and Heart, do Comprehend all the reſt: wheras we read of Liver, Kidneys, Gall, and ſuch other Inſtruments of Vegetative Nutrition, rather then of Senſation, and ſo of Seed and Milk, which are for Generation and Nutrition of others. Now that the fivefold Senſations of the five ſeveral Senſes are performed in the Brain, as well as the Senſation of the very Imagination itſelf, I ſhall farther moſt plainly prove, becauſ the Senſitive Faculcys do all Subſiſt in the Imagination; as may ſenſibly appear by the maner of their Senſation, which is not,

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nor can it be, without Animadverſion, as we rightly term it, becauſ it is the Adverting or applying of the Imagination to Contemplate the Senſible *Species*, and alſo the Irradiation therof by its own Animal and Senſitive Light, which makes the Senſation otherwiſe; though the Object, Organ, Senſorys, and all the *Apparatus* therof, be ready, and never ſo well inſtructed: Seeing we See not, and Hearing we hear not; or we ſee and hear not, or hear and ſee not; or ſee or hear this, or that, Viſible, or Audible Object, and not another; or one more then another, accordingly as we Intend it, or apply our Imagination to it, as I have ſhewed: and I have heard of one, who being to ſhoot at a Mark for a Wager, profeſſed that he thought he neither ſaw Heaven, nor Earth, nor any thing beſides the Mark; which moſt vehement Intention did very much conduce to his hitting of the Mark, and wining the Wager: and this Contemplation of the Imagination is that, as I conceiv, which we commonly call Common Senſ; whereby the Imagination, which is one and the ſame Faculty in itſelf, doth thus Contemplate all the ſeveral Senſibles; as alſo one and the ſame Appetite doth Affect or Diſaffect them; and one and the ſame Underſtanding underſtand them, and Will will, or nill them. For it is not the variety of Objects, but the ſeveral maner of Senſation, that doth diſtinguiſh the Faculty's, and make them Realy to differ; and thus the Senſes according to their fivefold Organs, and Senſorys, whereby their ſeveral Senſible Objects, or *Species* therof, are received ſeveraly, and in a ſeveral maner, are ſeveral; but though their Objects, that is, their Proper and Common Senſibles, may be ſeveral, yet as they both are ſo received in the ſame maner they do not diſtinguiſh the Senſ, nor make it ſeveral in itſelf. Alſo we may heer obſerv the very Spiritual Nature of the Senſitive Soul, and Imaginative Faculty therof, that though the groſs Senſible Objects be not only different, but contrary one unto another, and ſuch as will themſelvs be Miſt one with another, as Heat and Cold will be Contemperated into a *Tepor*; or otherwiſe there will be a great Conflict between them, when they meet together; yet the ſame Imaginative Faculty doth apprehend them both together (as when one hand is in cold Water, and the other in hott) diſtinctly, and inconfuſedly. Alſo this ſheweth the reaſon of that Sympathy and Conſent that is between ſome parts more ſpecialy, and the whole Body generaly, in Feel-

ing, wherof the whole Body is capable, as I said; that is, becauſ the Imaginative Faculty is one and the ſame, which reſideth in the Brain, from whence all the Nervs are diſperſed through the Body, and therefore the whole Body is ſo affected; yet ſo as a Wound in the Toe doth not Corporealy affect the Brain, or Imagination therin, but Spiritualy; and though the feeling in the Toe that is wounded being in the Standard, doth cauſ a Principal Senſation therof in that Part, and ſo in the Brain, and from thence in the reſt of the Body; yet that is only a Secondary Senſation, as I may ſo call it: wherof it is ſaid, if *one Member ſuffer all the Members ſuffer with it*; that is only by the Imaginative Faculty of the Senſitive Spirit therof, which is one and the ſame; though no other Part be Corporealy affected. And wheras I have often mentioned two ſuch ſeveral Kinds of Senſation, that is, one by the outward Organs and Senſory, and by the Corporeal or Elementary Mutation made in the Standard within the Body, and Irradiation of the Elementary Animal Spirits in the Nervs, which is Primary; and the other by *Species*, Actuated only by the Vegetative Spirit in the Elementary Animal Spirits in the Brain itſelf, as I have formerly ſhewed, which is Secondary: wherof we call one Senſ, and the other Imagination, I ſhall now ſhew the Senſible difference therof in Sleep, when all the Senſes are bound up and obſtructed; and yet then the Imagination doth thus operate in Dreaming; and the Senſes are ſo bound up and obſtructed by the Vaporous Bloud, which aſcendeth from the Heart, through the *Carotides*, (whence they are ſo called the Sleepy Arterys) to the Brain: and it is ſaid, that if they be ſtopped, Sleep will preſently enſue, though I rather conceiv that to be an Apoplectical, then Soporous Effect: for it is not the obſtructing of them, and thereby hindring the Sanguineous Vapors to aſcend, which cauſeth Sleep, but rather the contrary; that is, an aſcent therof more copiouſly, which doth obnubilate the *Baſis* of the Brain, and reacheth as farr as the Roots of the Nervs; and the Animal Spirits therin, which are moſt Pure and Spiritual, and the fitt Inſtruments of the Senſitive Spirit, are clouded by ſuch groſs and unconcocted Vapors, and thereby rendred unfitt; and ſo the Imagination cannot operate by them; whereupon that kind of Senſation ceaſeth, untill thoſe Vapors be again rectified and refined in the Brain, and ſo paſs into the Nervs,

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and then Sleep ceaſeth, and that Senſation begineth to operate thereby again. But the Imagination, being ſeated in the very Brain, itſelf, and probably in the upper Region therof, and Forebrain, (which we accordingly feel to grow moſt hott by the working therof) the Cloud of thoſe aſcending Vapors, being there weaker; (as the Vapors are, which aſcend higher in the Atmoſphere) and the Concoctive Power of the Brain, there being greater, the Imagination may Contemplate the *Species* in the Animal Spirits, which are in the Brain itſelf, and there Actuated by the Vegetative Spirit, which doth concoct and prepare them, as I have ſhewed, and which is ſufficient for this Secondary Operation by the Imagination, and needeth no ſuch Irradiation by the *Species* of External Objects, as is required in the Primary Senſation. And ſo this Secondary Operation by by the Imagination, in Dreaming, is alſo much weaker, then it is when we are Waking; or at leaſt farr more Wild, and Irregular: either becauſ thoſe aſcending Vapors are not yet ſo purely defecated in the upper Region of the Brain; or otherwiſe, becauſ the Imagination then wants the Archetypes of the Primary Senſation, whereby to rectify its own Contemplations. And it is evident that in Sleep, even the Animal Spirits of the Nervs are not ſo Conſopited, or, as we ſay, in a dead Sleep, ordinarily, but that any Vehement Senſible doth ſoon awake them; and the Spirits by degrees are rowſed up, and the Vaporous Cloud diſperſed; yea while we are aſleep, as the Cloud is more or leſs groſs in aſcending, or ſooner or longer in being purified in the Brain, ſo is our Sleep greater, or leſs, or ſhorter, or longer, and ſometimes the Soporous Cloud is ſo ſmall, and very Rare, that we are, as we ſay, between Sleeping and Waking. Now that it is ſo, may plainly appear by the Cauſes of Sleep; which are either Expenſ of Spirits, that induceth a Laſſitude, wherupon Sleep Naturaly enſueth, becauſ Nature requireth a Recruit therof, and the Bloud then aſcendeth more copiouſly to the Brain, which is the part affected, and indigent therof; or Satiety and a full Stomach, whereby the Vapors ſo aſcend of themſelvs; and Drinking commonly cauſeth Sleep more then Eating, becauſ Drinks are more Vaporous and Spirituous then Meats; or Dejection of the Spirits by Stupidity, and Sorrow, and the like, and ſo Narcotike Medicines by their Stupifying

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Quality induce Sleep; or Idlenes, and Ceſſation from Exerciſe of Body, or Mind, may be another Cauſ therof, as it removeth the Impediment of Sleep, or indeed the very Contrary therof, for ſo all Exerciſe is a Waking; and therfore a man cannot well ſleep if he do but ſtand upright; and Sleep, as I may ſo ſay, unbendeth the Bow, and relaxeth not only the Perceptive, but alſo the Motive Spirits; and thus as Exerciſe and Laſſitude, ſo Waking and Sleeping, do follow, and indeed mutualy cauſ, one another, by Expenſ and Recruit of the Animal Spirits, both Perceptive and Motive; which heerby appear to be very Connatural: for as *much Study is a Wearines to the Fleſh*, as the Wiſe man ſaith, ſo wearines of the Fleſh is alſo an Impediment to the Study of the Mind. Now as I have ſhewed, that all Perceptive Senſation, both Primary and Secondary, is in the Imagination, ſo if any require that I ſhould alſo ſhew what is that Specifike Imaginative Power, whereby the Senſitive Spirit ſo Operateth (wherof I have thus farr traced the Operations, or maner of working, from the Senſible Object to this Senſitive Faculty) as I have ſhewed, that the Senſitive Spirit itſelf is an Active Spiritual Subſtance Created by God in the Begining, and firſt produced with this and all other the Innate Qualitys therof, ſo Actuated by God in this Fifth Day; ſo I can only affirm that this Imaginative Power is ſuch, becauſ God ſo Created it; as Matter is Matter, and Spirit Spirit, Heaven Heaven, and Earth Earth, Extenſion Extenſion, Heat Heat, and the like, becauſ God ſo Created them in the begining; and as no man can go beyond that Begining, ſo neither beyond that Creating Cauſality; but muſt neceſſarily at laſt terminate in the Wiſdom and Will of the Creator therof, when he knoweth that he hath arrived at any Simple Subſtance, or Accident, which is not Compoſited, or Miſt with others; and this, as I have ſaid, is the *Non ultra*, or utmoſt Bound, not only of Human, but Angelical Knowledg; and they who will inquire farther into the Cauſ of every Cauſ, and ſo Infinitely, like Children, ſhall not, nor can they, ever be Satisfied. Wherefore I ſay, that the Senſitive Spirit of any *Animal* ſuch, as it was Created and produced in this Fifth Day, or afterward, and not being Miſt with others (as the Senſitive Spirit of a Mule, which is both Equine and Aſinine) is ſuch a Simple Subſtance Immediately Created by God, though

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the whole *Compositum* be Compounded of that and a Vegetative Spirit, and Elements, and Matter, as I have shewed: and this is, as I conceiv, the proper Work of a Philosopher, thus to inquire into the Works of Improper Creation, that is the Mistion of Elements, Actuation of Qualitys, Composition of Matter, Elementary, Vegetative, and Sensitive Natures, and the like; and so like a Speculative Chymist, to Separate those things in their several Natures by his Intellect, which they can never do in fact by all their Instruments, and that it is a very Improper Work for him to inquire farther then the Work of Proper Creation, which he ought wholy to resolv into the first Caus of all Causes, that is, God, who *hath made all things for himself*, and *according to the good pleasure of his Will*. And so also I say, that as God made the Sensitive Soul to be a Living Perceptive Spirit, accordingly he Imprinted in it certein Simple Innate Notions, whereby it might so Perceiv in a Living maner, by, and with the Instrumentality of the Vegetative and Elementary Animal Spirits and *Species* and a Conjunction between them and the Sensitive Animal Irradiation. Thus Generical Imagination, Feeling, and the like Sensitive Notions, wherwith all Sensitive Spirits are instructed (and not Vegetatives, Elements, or Matter), are the Innate Facultys, whereby Sensitive Spirits do Imagin, feel, and the like; and not the others: and this is, as I said, a double or Reflex Operation, wherof no Inferior Nature doth partake: for Sensitives being Perceptive *Animals* do not only Imagin, Feel, and the like, but also Perceiv, that they do so: wheras others only do what they do, without any such Reflection upon their Operations. Again, there are other less Simple Sensitive Notions Common to all perfect Sensitives, as that the Whole, while it is Whole, is greater then any Part therof divided from it: and so that Two are more then One, and the like. Also I suppose that they have some Generical Sentiment of Symmetry, Harmony, and the like; becaus these also are Common Sensibles, which they may, and do Perceiv, as well as Proper Sensibles. Besides these there are also Proper Powers; as Ingeny, or Artifice, wherof all Sensitives, as Oisters, and the like do not partake, and so are said to want Imagination: wheras they also have that Common Perception, which I call Imagination, otherwise they should not be Sensitive:

and there are proper Notions, which belong properly to one *Species*, and not to another, as to a Bird to Sing and Nidificate, to a Spider to spin, to a Bee to make Honey, and the like; which, though they are very Ingenious and Artificial in the External performance, yet they are so wrought by them according to the Specifical Notions or Sentiments of their kind: as an Infant so Sucks; a Lamb flys a Wolf, which he never saw before; and a yong Hound hunts an Hare before he seeth it. Also by these Innate and more Immediate Notions the Imagination is able farther to Acquire, and Collect any other Sensitive Notions, of whatsoever it Perceiveth by any of the External Senses; which it doth likewise add and Ingraff into the others, and retein in itself, and gain Experience, and so may thereby be more Instructed to live the Sensitive Life therof. And the Imaginative Faculty, being thus furnished with Sensitive Notions, can Compound, and Divide them; and so discourse of Singulars, or by Particulars, which are Sensible; as an Hound can distinguish one Hare from another, and an hunted from a fresh Hare, and therefore doth accordingly follow one, and not another: and so likewise the Sent of an Hare from the Sent of a Deer, or Fox, or Otter, or the like; and therefore doth accordingly follow it: for Singulars are only as so many Pictures of Individual Hares, and Particulars as the Signe of any Hare, which are both Sensible: and none of these Operations may be denied to Brutes, which are otherwise distinguishible from Intellective Operations, as I shall shew heerafter. But though there be these Common Notions, or Prenotions, which are otherwise called Instincts, in Brutes, whereby they are apt to Perceiv Potentialy, yet they cannot Perceiv Actualy, without the Instrumentality of the Animal Spirits, and *Species* therin (as well as their own Sensitive Irradiations) as I have shewed: which to prepare for themselvs, they have also a Specifike Power, whereby they can, as I said, Command and Move the Vegetative Spirit and Power therof, so to Actuate and produce them accordingly as they call for them; and without all these, both Sensitive Principles, and Vegetative, and Inferior Instrumentalitys, the Sensation cannot be performed. All which, as I suppose, doth plainly appear by Memory; whereby, when we have Acquired any new Notions, and would Remember them, we thus, as it were, Dictate to the Inferior Facultys, and then they

they produce a new Image or *Species* therof, which we do Contemplate: wheras if it were any former Image or *Species* therof, as hath been ſuppoſed, certeinly ſuch ſhould paſs away with the Subſtance of the Nerval *Succus*, wherin it doth Subſiſt; and if that doth not Circulate as ſwiftly as the Bloud, yet it paſſeth away more or leſs continualy, and is recruited every Night by ſleep: wherefore it is Impoſſible that the Images or *Species* ſhould remain therin, which we have Acquired ſo many years ſince; but the Acquired Notions therof muſt neceſſarily remain in the Imaginative Faculty, which continues to be one and the ſame according to the Individual Oeconomy of the Senſitive Spirit, and wherof the Animal Spirits have the Images Potentialy in themſelvs. I have been informed by a Phyſician concerning a Knight his Patient, and my well known Friend, that ſometime before his Death he could not Remember things done the ſame Day, and yet could very well Remember things done many yeats before; which was from the ſame reaſon, that the Notions which he had Acquired in his Youth, did remain in his Imaginative Faculty; which was now grown ſo weak, that he could hardly Acquire any new Notions; and ſo Youth doth beſt retein any ſuch Acquired Notions, becauſ they are then recent and freſh: and there are not many others before Acquired, which might oppreſs the Memory: for though Imagination be a very Spiritual Faculty, yet it is Finite, as well as Senſ, and cannot Remember all, nor any more, or better, then according to the Strength therof; and theſe Acquired Notions are fixed by often Repeating, Meditation, and the like: and as the Senſitive Spirit is very Oeconomical, and therefore much delighted with Symmetry, and Harmony, ſo the Memory therof is helped by Order; and it will ſtrangely piece its Notions together by any litle Similitudes or Alluſions; and ſometimes when it cannot ſuddenly Retrive and Dictate them, or if the Animal Spirits be not ready to Actuate and produce the Images therof, we ſay it is at our Tongs end; as when we are ready to utter a Word, and are ſome way hindred. But as there are Deceptions of Senſ, as I have ſhewed, ſo much more of the Imagination, as it is more Remote from the Senſible Object, which is Realy true in itſelf; not only as Imagination is a Judicative Faculty, and ſo may alſo Err, in Dividing, Compounding, and Diſcourſing thereby; but

in its moſt Simple Perceptions; for it is very Mimical, and can Imitate any thing, by its own Types, and Images of things which it did before Contemplate in the more Senſible Prototypes, by the Primary Senſation therof, as I have ſhewed: and though theſe Secondary *Species*, which are not Irradiated by the real Senſibles, are meer Phantaſms, and farr more weak and Momentany then the others, yet I know not how, a vehement Imagination can ſo Intend them, that they ſhall appear as though they were Real; which certeinly is by ſome ſuch extraordinary Power of the Vegetative Spirit, whereby it cauſeth External and Corporeal Signatures in the *Fœtus*; and therefore may well cauſ ſuch *Species* and Images in the Nerval *Succus*, by ſuch extraordinary Animation of the Animal Spirits: which yet is alſo firſt cauſed by ſome very ſtrong Acquired Notions in the Imagination, through Love, Pride, Covetouſnes, Fear, or ſome ſuch vehement Luſts and Affections, and a proportionable Senſitive Irradiation thereby; and this is indeed *Læſa Phantaſia:* but if thoſe Paſſions be Sudden and Temporary, then the Imaginations are ſuch alſo, as in ſudden Frights, and the like; which are only *Uno Impetu:* or they may be only particular Diſtractions, according to ſuch particular Objects about which the Imagination hath been ſo Intenſly exerciſed; wherof we have a notable Example in him who was

In vacuo lætus ſeſſor plauſorq; Theatro,
Cætera qui vitæ ſervaret munia rectè:

and there are many known Inſtances of ſuch perſons, who are thus Habitualy diſtracted as to one Object, which whenſoever it is mentioned unto them, that ſtrong and vehement Notion therof, which they have Acquired, is thereby Excited, and the Phantaſm ſo Senſibly Actuated, that it doth ſo Predominate, as to over-rule and over-turn all their other Notions, and the ordinary Regularity therof: and I ſuppoſe, that moſt men have ſome Tincture of this Madnes, more or leſs; who though otherwiſe very Prudent and Sober, yet if mention be made of any thing wherin they affect to Excell, or which they vehemently Love; as their Wit, Valor, Gentility, Eſtates, Children, and the like; they will run out into ſuch Extravagant diſcourſ therof, as if they were not the ſame men therin, as they are in other things: (which we call their Infirmitys), Alſo there is a General and Total Diſtraction, either Temporary, as in Drunkenes, or Anger,

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(which is rightly termed *furor brevis*) and the like; or Continual; as when any such Particular Fansy is so Prepotent that it works upon the very Substance of the Brain, or Qualitys of the Animal Spirits; or they are so hurt by Sicknes, or any Bodily Distemper, which is properly *Cerebrum læsum*. Now becauſ it is confeſſed that there are ſuch Infirmitys and Deceptions of the Senſ and Imagination, therefore Sceptikes ſay, we are always in a Dream, or Frenzy: but then how do they know it? if they alſo are like the reſt of Mankind, who are all in a Dream, or Mad: for they who are ſo, think all their Phantaſms to be Real Objects; and ſo they diſprove what they affirm: for certeinly if all men were ſo diſtempered and deluded, we ſhould all conceiv thoſe Deluſions to be Real, becauſ none could diſprove them by any more right Cogitations; as if any man ſhould only dream all the days of his Life, he could never refute any of his Dreams, but his whole Life ſhould be only one continued Dream: wherefore ſince we can diſtinguiſh between Dreaming and Waking, certeinly we are not always in a Dream; and becauſ we can diſtinguiſh between ſome Errors and ſome Truths certeinly we are not always in an Error: though ſome who cannot, or rather will not, underſtand any thing of Truth, becauſ they will not be obliged to the Obedience and Practice therof, would thus drown all others with themſelvs in the ſame Bottomles Pitt of Perdition. There are alſo others, that think theſe *Entia Senſationis* to be ſome ſuch Imaginary Things as are neither Entitys, nor Not-entitys, but they know not what; wheras, as I have ſaid, Imagination is certeinly a Real Act; and the Phantaſm a Real *Species*; which the Imagination doth behold, and whereby ſuch Real Effects are produced, though there be no ſuch Real Thing, wherof the Imagination Imagineth it to be the Image or Picture; as a Picture of a Man at large is no leſs a Picture, though there be Realy no ſuch Perſon *in Rerum natura* as well as the Picture of any Individual Perſon. But the Imagined Object, as Imaginary Space, and the like, are pure Nonentitys in themſelvs, though we frame ſome Real Imaginations therof. Nor is it poſſible that there ſhould be any *Medium* between Entity and Nonentity, becauſ they are Contradictory Terms, and whatſoever any may Imagin therof, yet, if they will *Effari*, they muſt ſay, either *Eſt*, or *Non eſt*, whereby they ſhall either affirm or deny it to Be:

and in all Logike, no Proposition can be otherwise formed, either Categoricaly, or Hypotheticaly; nor is there any stronger or more undeniable *Dilemma*, then this, Either it is, or it is not Metaphysicaly, and Simply, which admitts no Division, or Distinction; for though there may be many Subalternate Differences of Entity, yet *Ens*, as I said, is *Genus Generalissimum*, without any Specifical Difference whatsoever; and as whatsoever is, Is, which is a most Identical and Infallible Proposition, so whatsoever is in any Mode or Respect whatsoever, or with any Subalternate Difference whatsoever, Is: and if it is, it is a Creature of God, which is Convertible, becaus it is Created from Not-being to Being; and therefore is an Entity in Nature, and not a Non-entity, though the Notion therof be only an Imaginative Figment: and if it be no Creature it is no Thing in Nature, but only an Imaginary Figment; wherof the Fiction is somthing, but that which is so feigned is meerly Nothing, as I have shewed.

V. Sensation, or Sensitive Life, is, as I have said, always with Perception and Appetite; otherwise it should not be Life: and therefore, as these two do Immediately Subsist in the Sensitive Spirit, so they do also always Cooperate to produce any Vital Act: for thus the Imagination doth Perceiv Spontaneously; and the Appetite Affect or Disaffect Perceptively: and these are the most Intrinsecal and Immanent Acts of both the Facultys, which they do so act between themselvs, but yet their own Operations in themselvs, are as different and several as the Facultys; for to Perceiv, and to Affect any thing, do very much and very plainly differ: and so their maner of working is very different; for first the Imagination Perceivs, and Judges the Object to be Sensitively Good, or Evill; and so presents it to the Appetite, which accordingly Affects or Disaffects it; wherefore since several Cells have been by some found out in the Brain, for the Imaginative, Judicative, and Memorative Powers, (which are only such several Powers of one and the same Imagination, wherin they do all Immediately Subsist) I wonder that never any such Cell hath been appointed by them for the Appetite, which is certeinly a distinct Faculty from the Imagination, and Subsisting Immediately in the Sensitive Spirit, as well as it. And as there are such several Powers in the Imagination, so also in the Appetite;

petite; but as first the External Sensible Object by making an Alteration in the Standard of Sens, which is within the Body, doth by it Irradiate the Animal Spirits, whereby the Sensible *Species* are produced, which the Imagination doth afterward also Irradiate, and Perceiv by a Primary Sensation, and accordingly after the Object is removed, Irradiate only by itself, and so Contemplate the Phantasms therof, by a Secondary Sensation; so contrarily the Appetite, which followeth the Imagination, doth first Internaly Affect, or Disaffect, in itself, by its own Power which is its Primary Sensation; and then exerts its Appetitive and Motive Power by a Secondary Sensation, either in those Affections which we call the Passions of the Soul, or in the Motion of the Body or any part therof; and though the more Immediate Instruments of the Appetite be also the Motive Animal Spirits in the Nervs, yet it likewise causeth Fluxes and Refluxes of the other Blouds accordingly; which discovers a great Union and Consent between them; and as the Object of this Faculty generaly is Sensible Good or Evill, so, according to all the Diversifications therof, the Appetite doth exert itself in those several Passions, which we call Affections, and are, as it were, the Fluxes and Refluxes of the very Sensitive Soul, answerable to those of the Bloud and Spirits, whereby it so expresseth itself: for this Spiritual Faculty is not an idle and ineffectual Affection or Disaffection of the Object, but also armed with a Power to Effect all the Sensitive Operations therof in the Body. And so also the very Motive Power, whereby the Vegetative Spirit is Guided in producing and Actuating the Phantasms for the use and service of the Imagination, is not only from the Imaginative, Perceptively, but also from the Appetitive Faculty Spontaneously. And thus in the same Sensitive *Compositum*, there is not only Local Motion of the Matter to Union, as in the Instance of Introsuction of the Finger, and the like; and to Station, as when the Body falls down by its own Weight, and the like: and Elementary Motion by Rarefaction and Condensation, as I have formerly shewed, and also Vegetative Motion, as in Contraction of the Muscles; which certeinly cannot be Motions of the Matter, becaus they are Violent and contrary unto the Rest therof, and as I have shewed, in the *Systole*, the Heart lifts itself upward by this Vegetative Motion, but in the *Diastole* falls downward again by its

its own *Pondus* of Matter; which for the same reason can be no Elementary Motion; for in the *Systole* it is contracted, and in the *Diastole* returns again to its own Elementary Laxity by its own Elastical *Potentia*, which was Spiritualy contrary to the Contraction. And as the *Basis* of the Heart being united to the Body, the Muscular Contraction therof doth thereby draw it upward, which otherwise it could not, so all such Muscular Motions are by such Traction to, or Trusion from another Body, as a Fulciment; for so an Heart taken out Moves in the Hand; and a man bowing forward can lift up no more then according to the Weight of his Body, to which the Traction is; but standing Perpendicularly upright, he may lift up any greater Weight according to his Muscular Strength, by Trusion from the ground, as a Fulciment; and so he bears up any Burden on his Shoulders: wheras if there be not such a Fulciment, he can bear nothing, but all will sink together; as if he stand on the Water, or in a descending Scale, or the like: and so a man in a Scale holding at the Beam, cannot lift himself up; becaus it descends toward him, and he cannot also ascend toward it; as he may, if there be such an over-weight in the other Scale as will hinder the descent: nor can he make that Scale, wherin he is, to weigh more then the Weight of his Body, by pulling it down; becaus he hath no hold below him, to which being fastned himself, he might so draw it down. Also besides these Muscular Motions in the Flesh, and the constant Pulse caused thereby, (which plainly is Vegetative, or by a Pulsifike Power of the Vegetative Spirit,) there seems to me to be such a sudden and occasional Motion in all these Fluxes and Refluxes of the Bloud, caused by the Passions, as is not only Sensitive, but Vegetative: for I suppose that the Sensitive Appetite in all such Local Motions therof doth thus Move the Body, not Immediately by itself, but by the Mediation of such Vegetative Motions; and so Guides and Governs them, Directively and Spontaneously, as I have shewed: as when I write, the Motion of my Hand and Pen generaly, is from the Elementary Motive Spirits in the Nervs, which the Vegetative Spirit Actuates and produces, and itself Moves by and with them, as it doth by and with the Muscles; or as my Hand writes by and with the Pen, only as a fitt Instrument of the Mover; for certeinly my Writing is no kind of Elementary Motion,

such

such as is by Rarefaction or Denſefaction, Magnetical or Planetary Virtue, or the like, but a Vegetative Motion, as that is an higher and fitter Inſtrument of a Senſitive Mover, and alſo as a Motive Inſtrument itſelf; and the Moving of my Hand in writing generaly is no Senſitive Motion, nor doth my Pen, Hand, Nervs, Animal Spirits, or Vegetative Spirit, Senſ or Perceiv what I do: but only my Senſitive Spirit, which therefore in cauſing this or that Letter or Word to be writ Guides and Governs the Vegetative Mover, as if another ſhould guide my Hand with his; that is, the Senſitive Spirit doth not only Command, as I have ſaid, becauſ the Inferior Spirits have no ſuch Perception or Appetite, whereby to know what is Commanded, and to Obey, but alſo the Senſitive Moves or cauſes the Vegetative Spirit, which is Motive in itſelf (ſo and in ſuch a maner, whereby this or that Letter or Word ſhall be writ) to Move the Elementary Spirits, which are its Immediate Inſtruments, and not otherwiſe: for as the Vegetative Spirit doth certeinly of itſelf perform all thoſe Motions, which we call Involuntary, that is, which are not Spontaneous, and ſuch as are not Immediately Subſervient to the Senſitive Spirit, nor at the Command therof; ſo alſo I ſuppoſe, that it doth as well perform all thoſe other Motions which we therefore call Voluntary, or Spontaneous, becauſ they are only Guided and Governed by the Senſitive Spirit. And ſo that all ſuch Motions in the Senſitive Body, which are not of the Matter, nor only Elementary; that is, by Rarefaction or Condenſation, but of an higher Nature; that is, either by Expanſion or Compreſſion, or more Regular, as all Involuntary Motions, or more Various and Indifferent, as all Voluntary Motions, are Vegetative; but the Voluntary are alſo Guided and Governed by a Senſitive Motion: and that all ſuch Motions, whereby we perceiv that we do ſo Guide and Govern them, are Senſitive. And ſuch are all the Moving *Imperia* or Commands of the Senſitive Spirit, whereby it doth Spontaneouſly Move and Guide the Vegetative Spirit, in producing and Actuating the Animal Spirits, both Perceptive, and Motive, Arrecting the Muſcles, and the like; and ſo *Priapiſmus* and others may be both Involuntary and Voluntary: and ſuch Senſitive Motions though never ſo ſwift and ſudden, yet are not Involuntary, but Voluntary, if they be with any Perception and Appetite; for in all theſe Motions the Vege-

tative Spirit is alway ready to Execute the Spontaneous Commands of the Senſitive Spirit, and is a very quick and Active Mover in itſelf, as appears by its own Involuntary Motions; but eſpecialy in theſe wherin it is Subſervient to the Senſitive Spirit, which is more Active, and requireth ſuch fitt Inſtruments: and as the Senſitive Spirit Moveth in itſelf, as quick as Thought or Wiſh, ſo where no Deliberation is requiſite or to be admitted, or there is an Acquired Uſe and Cuſtom it preſently Commandeth, Perceptively and Spontaneouſly, and is as preſently Obeyed by the Vegetative Spirit, though without any Perception or Spontaneity therof. And thus I conceiv, that theſe two Senſitive Facultys, Imagination, and Appetite, do Govern the whole Senſitive *Compoſitum*, reſiding together in the Brain, as they do Mutualy Cooperate, and that they or any of their ſeveral Powers are not ſeated in ſeveral Cells therof, as hath been ſuppoſed; but that the ſeveral parts of the Brain are for refining, percolating, and preparing the Animal Spirits therin, by the Natural Chymiſtry of the Vegetative Spirit; and whereſoever theſe two Faculys have their Centrical Seat, which probably is in the Forebrain, or *Cerebrum*, as it is Eminently ſo called, they are both together, furniſhed with all their Senſitive Powers: for the Brain is not divided into ſeveral Organs, as an Ey, an Ear, and the like, but is all one Organ of theſe two Faculys, as the three Humors in the Ey, with their Coats, and appurtenances are one Organ of Sight: yet it is alſo true that they have their Nervs diſperſed from the Brain through the whole Body, both for the Intromiſſion of External *Species* by the Animal Perceptive Spirits to the Imagination, and alſo for the Exerting of the Motive Spirits and Operating of the Appetite by them in all the Body: and yet as the Faculys themſelvs are Conjunctly in the Brain, ſo alſo theſe Animal Spirits, which are their Inſtruments, are conjoined therin, and in the ſame Nervs: and there may be Operation by the one, and not by the other at the ſame time; as in Sleep, when the Senſes are obſtructed by Vapors, which hinder the Intromiſſion of the *Species* of External Objects, yet the Appetite then working in the Brain, as well as the Imagination, may Exert the Motive Spirits, ſo as to cauſ us not only to Talk, but alſo to Walk: and as they are thus Conjunct in themſelvs, and in their Inſtruments, ſo alſo in their Operations, whereby they do not only Spontaneouſly Perceiv, and Perceptively

ceptively Affect or Disaffect Immanently, in such Actions as are performed between themselvs, as I before shewed; but also in all others, as the Appetite doth move the Vegetative Spirit to produce and Actuate Phantasms, as well as the Imagination doth Direct it what Phantasms it shall so produce and Actuate; and the Imagination doth also Direct the Vegetative Motions, as well as the Appetite doth Move and Guide them, but they are distinctly called Imaginative, or Appetitive Actions, accordingly as one or other doth Predominate therin. And as they are both thus Conjunct Spiritualy, in themselvs, so are they also with the Sensitive Body, thus Subordinating the Vegetative Spirit therin Immediately, and by it the Elementary Mistion, and Matter to their Sensitive Spirit, by such Natural Aptitude and Combination, that as the Elementary Animal Spirits are refined and sublimated to the highest Purity wherof they are capable, and their Vegetative Spirit indued with a greater Activity, then appears in any Grass, Herbs, or Trees; whereby they may ascend toward this Sensitive Oeconomy, and be the Instruments of a Sensitive Life; so the Sensitive Spirit also is made, as it were, to Condescend to them by a Conjunct Irradiation of the Imagination, and Eradiation of the Appetite, and cannot Live, nor Act, without them, nor by or with any other Elementary or Vegetative Instrumentality whatsoever; and therefore it hath its own Standards in its own Body; whereby only it doth Immediately perceiv and feel, as it doth the Temperament of its own Flesh, and the Alterations therin; and not any of the External Qualitys, as the Heat of the Fire, or Cold of the Air, without the Body, which only caus the Alterations without, whereby they caus the like within the Body, and so Mediately become Sensible; as the Weather is by a Weatherglass; and not otherwise. And these Internal, and indeed most Proper Sensibles only and none others do Irradiate the Animal Spirits in the Nervs, which are propagated to the Brain, where the Sensation is performed; and the Sensitive Soul also doth only Move its own Body, wherin it is confined, by its own Powers and Organs, and others thereby: as the Hand is therefore called the Instrument of all Instruments. And yet it is in itself a Living and truly Spiritual Substance, and so are all its own proper and Immanent Actions Spiritual, whereby it doth Abstract from more Coporeal Objects Sensitively, and also from more Gross

and Inferior Spirits, or Spiritual Qualitys; for so though by its Senses it doth Sensibly perceiv Heat, Cold, Pain, Burden, and the like, yet it can Immanently Contemplate, Affect, or Disaffect, the Speculative Phantasms therof, without any more Feeling or Sens, then it doth the Artificial Pictures therof: and indeed the very Sensible *Species*, Irradiated by the Sensible Qualitys, are not such as the Sensible Qualitys themselvs, nor do they so Affect the Brain as they do the Standard; as I have shewed, becaus the *Species* are only Irradiated thereby: for so Sensible Heat and Cold do not Burn or Chill the Brain, as they do the Flesh, which is the Standard. Having thus farr absolved this *Hypothesis* of Sensation, I shall now referr it to the Judgment of learned Physicians, whom I have ever esteemed a Prudent and Sober Nation; and very deservedly; their Profession being a continual Practice, and their Practice concerning the Life of Man. But I suppose I need not consult them, whether the Sensitive Soul be Centricaly seated in the Brain, or in the Diaphragm or Midriff; becaus it is also termed *Phrenes*, nor whether the *Septum Lucidum*, becaus it is termed *Lucidum* be the chief Organ therof; or as some say the *Pinealis Glandula*, becaus it only is One and Solitary; a very fit Organ indeed for such an Excrementitious Opinion, which none would ever have affirmed, nor can believ, who hath any purer part of Brain in him: and I very much wonder how such, who require of others a Mathematical exactnes, and Demonstration, can with so much Confidence and Impudence impose upon all others such a *Gratis dictum*, and lay this, as the Foundation of their whole Doctrine of Passions; making all Sensation to be only Local Motion, which is a Common Sensible itself: wheras Sensation, as I have shewed, is a Perceptive and Spontaneous Action; and though a Body be never so Mechanicaly and Artificialy Composed, like *Dædalus* or *Myron*'s Cow; or be made never so Automatous, as the Clock at *Strasburg*, *Archytas* his Dove, *Regiomontanus* his Fly, or Eagle, or *Albertus* his Man, with all Imaginable Members, and Local Motions; not only a Philosopher, but every Vulgar Spectator, will say *Deest aliquid intus:* as though a Parret hath Perception and Appetite, which they have not, and can imitate Human Speech, yet we all know that it hath no Human Understanding: and even Vegetative Spirits, which have Plastical, and many other notable Motions, and so Elementary, as the Planets,

nets, and Magnet (which *Thales* therefore termed Animal) have many wonderfull Local Motions, yet they have no Perception or Appetite; which are Living Motions or Actions, wherof all others are only Counterfeits and outward Expreſſions, like the Motions of the dead *Sultan*, to deceiv the People; wheras any Living Man himſelf cannot be ſo deceived, but plainly may Perceiv the Difference in himſelf: for Local Motion, which, as I have ſaid, is only Local Motion, is no Spiritual Action, which is not only Local, but alſo Spiritual, and not only Motion, but Action, or an Active Operation, and Superoperation, as the Spirit is a Subſtantial Activity; eſpecialy Senſitive Spirits, (wherof the very loweſt are not only termed Creeping or Moving, but alſo Living Creatures) have ſuch Living Motions or Actions: and ſuch Motions or Remotions from one State to another, as from Death to Life, or from not ſuch an Operation to ſuch an Operation, are certeinly Motions, as well as from one Place to another: as they themſelvs, who affirm them to be only Local Motions, do confeſs, in affirming them to be Motions, as they are indeed, but more or other then Local, that is, alſo Active Motions; and many of them ſuch as may be performed without any Local Motion, as though the Appetite in Moving the Body, or any part therof, doth effect and exerciſe alſo a Local Motion, yet the very Appetition, and Imagination in itſelf, and many Operations therof are without any Local Motion; which doth rather diſturb Senſation; as in Seing, Hearing, and the like, if either the Body be Moved, or the Object Removed, the Senſation is diſturbed: and though Senſible Objects Moving without, or Humors within, may Spiritualy Move Senſation by Tempting and Solliciting the Senſitive Spirit, humbly and Inferiorly, as that doth Move them by Commanding and Guiding them, Superiorly; yet they do not therefore Localy Move the Senſitive Spirit, or the Intrinſecal and Immanent Operations therof, as that doth Move them Tranſiently. And I ſuppoſe the next Attempt of them, who can thus affirm Senſation to be only Local Motion, will be to reduce Intellection and Volition, and our very Human Spirit, to this common debaſement of all Spiritual Natures, (which they generaly reſtrain to Matter and Local Motion) nor indeed is there any thing left, or any ſuch clear difference aſſigned by them, which may priviledg us from it, but only the favor and Indulgence of theſe great Maſters,

who can say and unsay, make and unmake, what they pleas, and how they pleas; and if all others were like to such, who have no higher Notions then Matter and Motion, it might with some probability be suspected that the Human Spirit is proportionably only Matter and Motion, which would perfectly gratify any who therefore affect to be Epicureans in Opinion, becaus they are such in Practice. But, as *Scipio* said, It is now more fitt for us to return Praises to God for all these his Various and Wonderfull Works, which can never be confined only to Matter and Motion, then to attend such Triflers any farther.

VI. Therefore let us prais the Father of the Spirits of all Flesh, and advance our Praises by a Song of Degrees, as he doth thus exalt his Creatures by several Degrees in the Scale of Nature. Who is Himself a Spirit, and Spiritual Life, Infinitely Contemplating and Enjoying Himself, and all other things in Himself; and hath given Life to all Living *Animals*, even the lowest Sensitive, which he hath placed in the same Animal Region with Intellective Man; though all Sensitives be Classicaly different from him, and both Subordinate and Subservient unto him, as he is to God; who hath made them the Images of his Intellective Spirit, as he is of the Divine Spirit. Whereby also they can Contemplate and Enjoy themselvs, and all other Sensible Natures; which though Perfect in themselvs, and in their own *Classes*, yet without these Sensitive and Intellective Spirits, who only can Contemplate and Enjoy them, had been made in vain, as a Spectable World of many wonderfull and usefull Objects, without any Spectator, or Enjoyer therof; all whose Goodnes and Perfection, though Good in itself, is farr Inferior to the least Insect; whose Body though more Minute then the smallest Watch, or other Engine is more Curiously and Exactly composed then the greatest Machins; and whose Inimitable Spirit possesseth the whole Sensible World, in the Potential *Species* and Images therof, within the litle Module of itself: wheras all Inferior Natures, whatsoever they are in themselvs, are unto themselvs, as if they were not; and howsoever they may differ one from another, yet bury all their Specifical Differences in the common Grave of their own Imperception, as if they did still continue in their Original *Chaos*, or the Eternal Abyss of Nonentity. Wherefore Sensitives

sitives were presently Introduced, when they were before prepared for these, as for their next and Immediate Ends of Intention, to perfect all their Perfections; which are not only farr more Excellent in themselvs, but thus also derive into themselvs all their Inferior Excellencies; Living upon their Inanimate Natures, while themselvs thus Live in their own Animate Natures; and are as farr above them, as themselvs are Inferior to Man; with whom, though they are not Coordinate, as Sensitives, yet they do Converse, as Living Creatures: and their Sensitive Life, though farr Inferior to his Intellective Life, yet is not only an Image therof, but also in his own Human *Compositam*, the Embryonical Inception, and constant Companion therof: and his Sensitive Body the Immediate Mansion and Officine of his Intellective Spirit, and of all the Operations therof, in this Conjunct State; and the Imaginative Artifices of Sensitive *Animals* are not only the Umbrages of his Intellective Act, but also in himself Subordinate Operators therunto. Also many of them have Language, that is either the Expression of their Notions by Signes, or of their Passions by Interjections, which is not only a Rudiment of his more Articulate Language but also some Rude Discourse, and Essay of his Ratiocinations. And yet all these Vive Images of Man, and his next and Immediate *Convivæ*, are not only Subjugated to his Tyranny by his Superior Power and Policy, but also by God and Nature Subordinated to his rightfull Roialty and Dominion; being all born his Slaves and Vassa's, who while they Live, serv him in all Offices, either of Labor, or Pleasure, yea Hawk and Hunt, and destroy one another for him; or are otherwise subdued and destroied by himself. And so he Feedeth and Preserveth his own Individual Life with Innumerable Lives of their successive Individualitys; which are in Natures Account the most costly and Princely Diet, though two Sparrous be sold for a Farthing in the Market of Man.

SECTION.

SECTION XII.

And God said, Let the Earth bring forth every Living Creature after his Kind, Cattell, and Creeping things. And it was so. And God made the Beast of the Earth after his Kind, and Cattell after their Kind. And God saw that it was Good. And God said, Let us make Man in our own Image, and after our own Likenes. And let them have Dominion over the Fish of the Sea, and over the Fowl of the Air, and over the Cattell, and over all the Earth. So God Created Man in his own Image; in the Image of God Created he him; Male and Female Created he them. And God said unto them, Be fruitful, and Multiply, and replenish the Earth; and Subdue it, and have Dominion over the Fish of the Sea, and over the Fowl of the Air, and over every Living thing that Moveth upon the Earth. And God said, Behold, I have given you every Herb bearing Seed, which is upon

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the face of all the Earth, and every Tree in which is the fruit of the Tree yielding Seed; to you it shall be for Meat, and to every Beast of the Earth, and to every Fowl of the Air; and to every thing that Creepeth on the Earth, Wherin there is Life, I have given every green Herb for Meat. And it was so. And God saw every thing, that he had made, and behold it was very Good. And the Evening and the Morning were the Sixth Day.

EXPLICATION.

God caused the Earth also to bring forth Beasts after their several Kinds, which was their Specifical Goodnes and Perfection. And when he had thus prepared and furnished the Elementary World with Vegetatives, Luminarys, and with all Kinds of Sensitives, Fishes, Fowls, and Beasts, he Immediately Created the Intellective Spirit of Man, and so made him to have Dominion over them all, for whom he had before made and prepared them. And he made both Man, and Woman, who might accordingly Procreate; and blessed them with the Blessing of Prolification, for the Increas of Mankind. And he made them and all their Posterity Lords over all the other Inferior Creatures in the Earth; and appointed Herbs and Fruits to be Meat for them;

and for Beasts and Fowls also the green Herb and Grass; whereby they should be Nourished, and Augmented, and so Preserved in their own Individualitys. And then God reviewed all his Works, and the whole Frame and Order therof, pronouncing and declaring it to be very Good, and Conformable to his Divine Wisdom and Will, and to the Law of Creation. And these were the Works of the Sixth Day, and of all the Six days.

ILLUSTRATION.

1. *Of Beasts.* 2. *Of Man.* 3. *Of the Human Body.* 4. *Of the Human Spirit.* 5. *Of the Image of God in Man.* 6. *Of the Immortality of the Soul of Man.* 7. *The Conclusion of all the Works of Creation.* 8. *Of the Goodnes therof.*

I. I Have already discourſed of Fishes and Fowls, and thereupon very largely of Sensation; and therefore shall now only need to discourſ of Beasts, not as they are also Sensitives, but as they differ from the others, and are Superior unto them; as may appear by their Bodys, that were made of the Earth, and are more Terrene, Firm, and Consistent, and of a more Quadrate, and Cubical Proportion, and more like to the Body of Man: and though some of them be also termed Reptiles, as Fishes generaly are, yet I conceiv, that as there are, as I said, Gradient Fishes, which have Feet, and so Fowls, that Creep going upon all fower, are called such from their very slow Motions; so also there are some more Tradigradous Beasts, which are therefore called Reptant, and not that they were Anomalous, or less perfect in their Kinds, then other; for they are also mentioned to have been made among other perfect *Animals*, and they were afterward specialy preserved, and so are also mentioned among them that entred into the Ark, wherin no *Anomala* were preserved, or such as are by Putrefaction, for so

so they might be restored again: and indeed if such other Sensitives could be made only of Matter and Motion, it had not been necessary that God should so Extraordinarily have preserved any of them; for so also he might have restored them, and he doth nothing in vain: wherefore since it is mentioned expressly, not only that God did preserv them generaly according to their *Species*, but according to their Sexes, Male, and Female, *to keep Seed alive upon the face of all the Earth*, it is very evident that they were neither Originaly made only of Matter and Motion, nor could be so Naturaly restored. Also wheras it is said, that God made *the Beast of the Earth* which is conceived to be *Fera Agrestis*, or Wild beast, I suppose it may be so understood in a moderate Sens, that is, less Philanthropous and Tame, though not Ravenous, or Rebellious so as certeinly none were Created before the Fall and Curs. And there is still the same difference of more or less Philanthropy remaining in their very Natures; so that some, though otherwise as Fierce and Couragious as others, are easily Tamed; as Elephants, Bulls, Boars, Horses, Dogs, and the like: wheras others will very hardly be so Civilised; as Lions, Tigers, Bears, Wolvs, Foxes, and the like: and this Natural difference in themselvs is the ground and reason of their more or less Cicuration or Mansuefaction. And that there is such a difference in their very Natures, may appear by this, that they are not only so different toward Man, but also among themselvs; and so it is a common Observation, that the more Mansuete do flock and heard together, and Live in Consort; wheras Wild beasts Live more Solitary, and are more Strange even to one another. Yet certeinly none of them were Carnivorous at first, nor did devour one another; for both they and man had then another Diet appointed for them by God, that is, Vegetative; which which also Comprehends the Elements, and Matter, as subordinate unto it; and as the Elements and Matter are its Subordinate Body, so it is also Nourished by the same, wherof it is Constituted; and so the Vegetative Spirit may be Augmented by Mistion of more of the Homogeneous Vegetative Spirit latent in the Nutriment: and so the Matter, Elements, and a Vegetative Spirit, make the Body of Sensitives, whereby it is also Nourished, and may be Augmented by Mistion of more

of the Homogeneous Sensitive Spirit latent in the Nutriment; and now when we and some Beasts do feed on the Carcasses of other Sensitives, yet we do not, nor can we, feed on their Sensitive Spirits, or Lives; becaus they are dead, and there is no Conversion of one Sensitive Nature into another, nor any such Mistion by Augmentation, as of Equine and Asinine Spirits in a Mule, or by Generation; nor yet is the *Anima* therof, or *Anima Mundi*, as some say, so Subordinate, either to Constitute, or Nourish the Sensitive, as Vegetatives and the rest are, and were so ordeined to be both for the Original Formation, and Nutrition of Sensitives; and thus they are not only Subordinate, as a Constituent Body, and Nutriment of Sensitives; but also Subservient, as Instruments of the Sensitive Spirit, as I have shewed, both in all those Motions, which we call Involuntary, and are properly Vegetative, and also in their Instrumental Preparation and Motion of all the Sensorious Organs, according to the *Imperium* and Gubernation of the Sensitive Spirit, in all those Voluntary Motions therof, which are performed thereby Transiently, and not Immanently in itself a'one. Also though God did not so expressly appoint Vegetatives, which are Terrestrial, to be food for Fishes that Live in the Water, yet probably they had the same food growing on the Shores and Banks; and such, as some report, may still be found in the bellys of Sea Morses, and such like Fishes, almost as great as Whales. And though it be not expressly mentioned either heer, or after the Deluge, whether Fishes did not then also prey one upon another, as now they do, yet possibly they might, being made to bring forth abundantly, whereby they might both maintein their own *Species*, and be food for others, or perhaps they might be Nourished by their, own Element, Water. However I doubt not, but that some Beasts were Created farr more strong then others, as they still are; and that some were Venaturient, as now they are, and had the same Specifike Sagacity, as well as Noses; and so might hunt others with a great Natural Delight, as I suppose they now do with more then any Huntsman that followeth them; which appears, not only by their Indefatigable Industry, but also by their very great Exultation, and Cry; yet I conceiv, that then they had no Cruentous or Murdrous Appetite; as now a Lion

doth

doth not usualy prey when he is full; and Cats first play with a Mouse, and then kill it; but then they did only play, and not Kill, when they could not Eat therof; which is the chief End of Killing. And so a yong Leveret, when it first sees a Dog, shuns him, and hath a Natural Sagacity of avoiding, and escaping the Dog, as well as the Dog hath such a Natural Sagacity in hunting the Hare. And heerby also the Ingeny of Sensitives did appear, aswell as in avoiding Poisons, and hurtfull Vegetatives, which as they are in themselvs certein Excellencys and Eminencys in the Vegetative Nature, so are these also in the Sensitive Nature; as of Courage, Fear, and the like Sensitive Affections. But of all Sensitives Beasts are Supreme, that is, in their whole Bestial Kind generaly, and so particularly according to their several Ranks and Degrees, which is the true Rule of Comparison; though the meanest and lowest of of Beasts be not more excellent then the chief Fowl or Fish, and so of Fowls and Fishes. And Beasts do not only excell the rest in their Bodily Constitution, as I have shewed, but much more in their Spiritual Qualitys, which are their very Sensitive Excellencys; though they may not have greater or more admirable Instincts then Fowls or Fishes; which are some special Endowments, wherwith Nature doth help out many Inferior *Animals*, yea Insects, as Bees, Spiders, Silkworms, Ants, and the like; and of all others, Man himself, though he hath generaly the most excellent Sensitive Spirit Subordinate and Subservient to his Intellective Spirit, yet he hath least and fewest Instincts; and indeed I know none, except Sucking, which is most Common and Necessary; yet as he doth excell them all in the general Sensitive Powers and Virtues, whereby he can more Curiously Contrive and Effect things even by his Sensitive Imagination and Ingeny, and hath such a most fitt Organ therof, as the Hand; so do Beasts heerin generaly excell Fowls and Fishes; and accordingly have more fitt Organs then they, and their Brains are more Conformable to the Brain of Man; and he hath not only most Service from them, but also most Conversation with them: and thus they were made in the same Day with him, and next and Immediately before him; and as both he and they have their Sensitive Spirits produced, and their Bodys formed of the Earth, so they both Live

together in the same Floor of this great Hous of the Elementary World; as God saith to *Job* of *Behemoth*, *which I made with thee, he eateth Grass as an Ox.* Yet we may not therefore, with some Credulous Admirers of Brutes to the Disparagement of our-selves and of all Human Nature, adopt them into the Family of Mankind, and claim kindred of Apes, Baboons, Marmosets, Drills, and I know not what Bestial Fauns and Satyrs, as but one Degree removed from ourselvs: for though they may thus approch unto us in our Body and Sensitive Spirit, yet we Classicaly differ, and vastly excell them, in our Intellective Spirit; wherof I shall now proceed to discours.

II. We now ascend into the highest Degree of the Scale of Nature, that is, of Intellective Spirits, Human, and Angelical; wherof the Human Spirit doth, as I said, Classicaly differ from Sensitives, and only Specificaly from Angels: but as the Human Spirit of Man is united into one *Compositum* with all the Inferior Spirits, and Matter, as they are Subordinate one unto another; so Man is the whole Scale in himself, which Angels are not: comprehending both Intellective and Sensitive and all other Inferior Natures, as Sensitive *Composita* do Sensitive and Vegetative and the rest, and Vegetative Vegetative and Elementary and Matter, and Elementary Elementary and the Matter, which are the true Approximations and Combinations or Syzygys of Nature (though no Participations Mistions or Confusions of Classical Differences, as I have shewed) but Man only is the *Epitome* of all, or as the Antients rightly stiled him a Microcosm, or litle World: for as Angels, who are the other *Species* of Intellectives, are pure Spirits, and no *Composita*; so Sensitive, and all Inferior *Composita*, are not Intellective; but only Man is all in one; that is, Potentialy, or Classicaly; though not Actualy, and Specificaly: as the Body of Man hath not Actualy the Rarity of Superæther, nor the Density of Subcortical Earth, nor all the Degrees of the Elementary Qualitys; though he hath them also Potentialy in himself, becaus he hath in his *Compositum* both Matter, and all the fower Elements, which are Potentialy capable therof, having the Real Potentialitys therof in themselves; and so he is not Specificaly Grass, Herb, or Tree, nor Fowl, Fish, or Beast; yet Classicaly he hath

hath a Vegetative and a Senſitive Spirit in his *Compoſitum*, and ſuch as is Specificaly proper to himſelf, as well as they have their proper Vegetative, and Senſitive Spirits. Wherefore plainly he is ſuch a Microcoſm in himſelf, as I have deſcribed; and the laſt *Valde bona* is pronounced of him, as he is ſuch a Microcoſm, as well as of the great World. And now I ſhall firſt diſcourſ of Man generaly, according to the whole *Compoſitum*, which every Man hath in himſelf, and which is indeed that which we call, Man. And as a Traveller, who firſt by his Mapp ſetts forth and travells over the World, wherof he hath yet only a Notional Module or Image in his Mind, when he returns back again, he reviews his Mapp with thoſe Real Apprehenſions which he hath Acquired, and comparing both together, finds them to agree, and ſo being fully ſatisfied, as he did before Contemplate the World itſelf only as Notional, he now looks upon the very Mapp therof, as almoſt Real; thus having gone forth out of my ſelf as it were into this Philoſophical World, I ſeem now to return home again to my ſelf, and in my own Human *Compoſitum* can behold the Abſtract of all that I found abroad: and thus I ſhall likewiſe deſire any other, who ſhall have travelled through theſe Diſcourſes of the World, now to make himſelf and his whole *Compoſitum* the Senſible Experiment of the whole Syſtem therof, as God hath deſcribed it in this Divine Hiſtory, which is alſo an Intellectual *Epitome* therof. And ſo let him conſyder whether he hath not a Body of Matter, which he may diſcover by the Extenſion and Denſity therof; and therin all the fower Elements, which he may diſcover by the fower firſt Qualitys therof; and alſo a Vegetative Spirit, which he may diſcover by the Involuntary Motions therof, in the Plaſtical Formation of his Body, Nutrition, and the like; and alſo a Senſitive Spirit, which he may diſcover by all his Senſations; and laſtly an Intellective Spirit, whereby he underſtands all the others, and itſelf, and conſciouſly knows, that it is not only rude Matter, or any Affection or Variation therof, but that it can Abſtract from the Matter, and that there are in it its own Immaterial *Idea*, Notions and Facultys, which muſt Subſiſt in an Immaterial Subſtance, which is his very Intellective Spirit: and as this is an Intellective Spirit, ſo is his Senſitive a Senſitive, and his Vegetative a Vegetative,

Vegetative, and Elementary Elementary Spirits, Classicaly distinct and different from the Matter, as well as from one another: for thus he knoweth and feeleth in himself, that there is in his *Compositum* a Sensitive Spirit, which sometimes rebelleth against his Intellective Spirit, and a Vegetative Spirit, whose Involuntary Motions the Sensitive Spirit doth not alway Perceiv nor Govern, and therefore they are called Involuntary; and a Mistion of Elementary Spirits, which sometimes, as in a Feaver, or the like, are distempered and disordered, and will not be Governed by the Vegetative Spirit, and Matter which will Move to Union and Station, as I have shewed, maugre all or any Elementary Spirit: wherefore such Different Operations do plainly prove them to be such Different Substantial Principles. And as they thus Classicaly differ, so plainly they are Subordinate one unto another, according to the Scale of Nature: for so the Intellective Spirit generaly Commands and Governs the Sensitive Spirit, as the Rider doth his Horse; and the Sensitive the Vegetative, and the Vegetative the Elementary, and the Elementary the Matter, as I have shewed at large, and any may Experiment in himself; for as this is the Scale of Nature, which God Erected, and the true Oeconomy therof, which he hath Ordered and setled in the World, so every Man hath, and if he attentively and duly consyder it, may evidently perceiv the same in his own *Compositum*. And, which is yet more admirable, as Man is this Centrical Orb of the whole World, not only Localy as he is in or upon the Earth, which is his Mansion, but Physicaly, as he is such a *Compendium* therof; so he is also Politicaly, according to the Divine Intention of the Creator, that one Nature, which all other Natures do Circumferentialy respect, and relate to him one way or other, as so many Lines to the Center: Wherefore as Angels probably were Created first, being the Supreme of all Natures; so Man was made last, as the Summ and Completion of them all, and the Political End therof, which was first in the Divine Intention, and last in the Execution. And Man was so made in order to the Assumption of his Nature by *Jesus Christ*, the Son of God, who is therefore called *the Begining of the Creation of God*, both *Principium*, and *Principatus*; *Alpha, and Omega, the First and the Last*; and I suppose that Consultation about the Creation of

Man

Man, *Let us make Man* &c. (wheras it is said of the rest, only by a Word of Command, *Let there be Light*, and the like) did refer specialy to *Christ*, who was to Unite and Espouse the Human Nature, (which as I said is the *Epitome* of the whole Creation) to the Divine Nature, in one Person. And yet some forgetting that they are Christians, and indeed Men, and seeming to trample on this supposed Pride of Man with a Real and greater Pride and Self-conceit, can be so ungratefull toward God their Creator, and *Jesus Christ* their Redeemer, and so falſ to themselvs, as to deny or disparage this Originaly Natural, though now depraved, Excellence of their own Nature. Wherefore to retund their Perversity, and to assert the Native Dignity of Mankind, I shall evidently prove it by the Letter of the Text; which declares this to be the very Intention of the Creation of Man, *Let us make Man after our Image, and in our own Likeness. And let them have Dominion over the Fish of the Sea, and over the Fowl of the Air, and over the Catell, and over all the Earth*; and accordingly it is repeated again by God himself unto Man, after he was made, that he might know and acknowledg it; *Repleniſh the Earth, and Subdue it, and have Dominion over the Fiſh of the Sea* &c. and so after the Deluge, God again renewed this Great Charter to Mankind, when also he added a farther Priviledg of feeding on Sensitives. And it is still evidently so according to Natural Reason; for thus, as the Intellective Spirit of Man in his own Human *Compoſitum* Subordinateth all the Inferior Natures to itself, so also doth Man in his whole *Compoſitum* Subordinate them all to himself; not as Angels, who by their greater Power can overrule all or any of them, yea Man himself, Externaly and Violently, but by an Intrinsecal Right and Power of Sovereignty and Dominion, whereunto Man was born, and hath it in himself according to the Law of Nature: for so also, though Angels are more excellently Intelligent of all these Inferior Natures then Man himself; yet he is more Sentient therof, becaus he is Sensitive, and they are not: and thus Man as one of them, and being more excellent then them all was made to be their Natural and Lawfull Prince, yet as in his own *Compoſitum* he hath not Actualy and Specificaly all the Differences of Inferior Natures, but only Classicaly, so he doth not posseſs nor hath

the use of all other things particularly, but generaly: and as a *Paterfamilias* or Master of the Hous, though he hath not the whole *Usus*, but the *Fructus* of all in the Family, and Hous; yet he may have the very *Usus* of what he pleaseth therof; for *Quicquid acquiritur servo acquiritur Domino*, so Man doth most Lawfully use the Service; yea the very Lives of Sensitives: and they have no Right or Propriety in any thing that they have, no, not in themselvs, against Man, whom God, the Supreme Lord of all, hath thus made Lord *over the Works of his hands, and putt all things under his feet*; that is, all these Inferior Natures, *Beasts of the Field, and Fowls of the Air, and Fish of the Sea*, which are next and Immediate unto himself, and in the same Region of Life with himself; and consequently all other things which are below them; but as he is Naturaly of the same Intellective *Classis* with Angels, whose Native Province is the Superæther, which is also Superelementary, so he hath only a Coordinate Communion with them heer, and shall have Eternaly heerafter, in such a way and maner as we do not now understand (nor will I presume to inquire:) and yet even now they are termed *Ministring Spirits sent forth to Minister unto them who shall be heirs of Salvation*. But most Sensibly the whole Elementary Globe, and all things therin, were made thus Subordinate and Subservient to Man, and since our Rebellion against God, and theirs against us, yet, as God declared to *Noah* and his Sons, we still hold the Reins of this Sovereignty and Empire over them in our hands, and so shall untill the last Dissolution: thus it is said, *Every Kind of Beasts, and of Birds, and of Serpents, and things in the Sea, is tamed, and hath been tamed of Mankind*: and none of them could ever yet make Warr with Men, but in all Ages, and all places of the Habitable Earth, are Enslaved, or Ejected, by us. Also as the Tapistry, and Pictures, and all the *Ornatus* of the Hous, is for the use of the Master; so hath the Intellective Spirit of Man the Intellectual Contemplation and Enjoyment of all the Spectable World: and thus we have hitherto discoursed therof; and though we cannot Comprehend all things, nor all the Secrets and Mysterys of Nature, which we therefore must Admire; yet that very Admiration is another kind of Enjoyment of them: as all Wonderfull Spectacles are very delightfull,

and

and we willingly beſtow our Pains in travelling to See them, and alſo very great Coſt to Purchaſe them. But the moſt Satisfactory and Senſible Evidence of this great Truth is the Univerſal Curſ and Blaſt that is upon all this Inferior Globe for the Sin of Man; which could not be for any other reaſon, but only becauſ it, and all that is therin, is his: and ſuch Derivative Puniſhment is alſo uſed in the Civil Laws of Men.—*Immeritis franguntur crura Caballis.*

III. I ſhall now conſyder Man more diſtinctly, as he is Compoſited of Soul and Body; and firſt his Human Body, and the Succeſſive Generation therof, according to his Original Creation. I have ſhewed, how, according to the Scale of Nature, the Matter is the firſt Body, and the Inferior Spirits, together with the Matter, are the Bodys of the Superior; and ſo that, and all the Inferior Spirits, Elementary, Vegetative, and Senſitive, are the Body of the Intellective Spirit of Man; which as it is a Senſitive Body may be termed his Beaſt, (as Beaſts are next unto him in the Order of Nature) though indeed his Senſitive Spirit be neither ſuch as the Spirit of Fiſh, Fowl, or Beaſt, Specificaly, but only Claſſicaly Senſitive, as they alſo are; wheras it is in itſelf Specificaly a more excellent and Proper Spirit, as I have ſhewed: which was alſo produced out of the Earth as well as the Spirits of Beaſts as they are all of the ſame Claſſical Nature: for ſo, as it is ſaid, *Out of the Ground the Lord formed every Beaſt*, &c. it is alſo ſaid, *God formed Man out of the Duſt of the Ground*; wherefore his Human Body was not only a *Lutea Imago*, or Statue, as is commonly ſuppoſed, and that ſo God Inſpired into it the Breath of Life, both Senſitive, and Intellective; for it was firſt made a Senſitive Body, having the Senſitive Spirit then latent in it, and ready to be produced; as the Senſitive Spirit in the *Fœtus* of any other *Animal* is ſo produced, when the Vegetative Spirit hath firſt Formed and Organiſed the Senſitive Body, as I have ſhewed, and may now evidently appear in the Creation and Generation of Man; for ſo God is ſaid to *breath into his Noſtrills the Breath of Life*, (or Lives, as it is Hebraicaly) that is, in the ſame Inſtant when God ſo produced by Improper Creation the Senſitive Spirit, or Life, (which is alſo called *Breath of Life*) by forming Man of the Duſt of the Ground, as well as any Beaſt

as I said, he also introduced into his Body the Intellective Spirit, and Life; for so he is said to breath into his Nostrills, that is, into such an Organical part of his Sensitive Body, as any Beast also hath; and not only into a Figure or Similitude therof, which a Statue may have; but plainly they were *Carneæ*, and not *Luteæ Nares*; and so was all his Body *Carneum Corpus*, and not *Lutea Imago Corporis*: and so *Adam*, after he was thus Immediately Created, that is, by Improper Creation of the Sensitive Body, and Proper Creation, of his Intellective Spirit, saith of *Eve*, who was also so Immediately Created by God, *this is Bone of my Bone, and Flesh of my Flesh*: and certeinly the Body of *Eve* was made of such a Sensitive part of the Body of *Adam*, and so indeed they were both Created by God; as it is said, *Male and Female Created he them*; and neither was the Soul of Man made Superior to that of the Woman, as the *Jewish* Rabbins most fondly affirm; nor yet the Body of Woman Superior to that of the Man, as some fond Amorists are apt to fansy. And wheras God is said to Build or Ædificate Woman, so also it is said that he Formed Man and Beasts. And this special Ædification of Woman out of the Rib or Side of Man, and not Immediately out of the Earth, was somwhat like Generation by Seed; which is a Decision from the Body of the Parents, whereby the Child is as it were a part therof; and as that makes the Natural Union and *Storge* between them, so likewise this first Creation of Woman in such an Extraordinary maner, otherwise then of any other Feminine *Animal*, (which is not so made, nor any Woman since of the Rib or Side of Man) was not only the Original Institution but Natural Law of Matrimony between Man and Woman in Paradise, more then between any other Sensitive Male and Female: and is so Interpreted in the following words, *Therefore shall a Man leav his Father and his Mother, and shall cleav unto his Wife; and they two shall be one Flesh.* And indeed this is the Foundation of all Civil Society, and Polity of Mankind, wherin he being naturaly *Animal Sociabile* excelleth all other Sensitives; for so Husband and Wife were not only before Father and Mother, but, as I may so say, the very Parents of Parentality itself; and without Lawfull, that is, such Human Conjugation, there is no Lawfull, or Human Filiation. Thus Matrimony doth unite not only Man and Woman between themselvs,

but

but also their Children, as the *Pignora* of their Matrimonial Covenant, and Conjugation, during Life; wheras the Bond of Bestial Copulation and Procreation is not constant, but even Parental is soon forgott and vanisheth away. And this also in Mankind maketh Fornication to be Naturaly and Moraly unlawfull, becaus *he that is joined to an Harlot is one Body, for two (saith he) shall be one Flesh.* And Matrimony is Mystical, and Typical of *Christ* and his Church; between whom there is a Spiritual, as this is a Carnal Union; and *Christ* hath married it to himself with an everlasting Covenant, as this is Mortal and Temporary: and thus the Apostle citeth the aforesaid Text, and subjoineth, *This is a great Mystery, but I speak concerning Christ and his Church.* Now wheras it is said, that God formed the Body of Man *of the Dust*, or as it is Literaly, *Dust of the Ground*, and nor, as it is said of Beasts, *out of the Ground*, it may import a more Delicacy, or Tendernes, of the Human Body, proportionable to the more Excellent Sensitive Spirit, as Dust is a finer and purer part of Earth; but I rather conceiv, that it is so expressed to humble Man, the most Excellent of all sensible *Animals*; in that sens wherin it is so afterward applied, *Dust thou art, and unto Dust shalt thou return.* Thus it appears plainly by Authority of Scripture, that Man hath not only an Intellective, but also a Sensitive Spirit, in his *Compositum*; becaus it is so said that God breathed into his Nostrills the Breath Singularly of Lives Dualy, that is, though his Intellective Soul only was Inspired, yet the other was produced. And so also according to Reason; for these two Spirits are Classicaly Different in the same Human *Compositum*, as well as in a Brute and an Angel; for one is Material and United Mediately by the Inferior Spirits to the Matter, and the other Immaterial; and so the one can only be and Operate Conjunctly in and with the Matter and Body therof, but the other may be and Operate Seperately without them: nor can these be two Spirits Mist together, any more then Matter and Spirit, (wherof, when they are Consubstantiated, the Matter is no less Matter, nor the Spirit Spirit; though they do Consubstantiate one another Mutualy and Conjunctly, whereby they are and Operate as one perfect Substance) and much less the Intellective and Sensitive Spirit of Man, which are not Consubstantiateed. Neither hath the Intellective Spirit Eminently (as it is commonly termed, though none

can understand what it should signify) the Faculty's, Powers, and Quality's, of the Sensitive Spirit, or the Sensitive of the Vegetative Spirit, or the Vegetative of the Elementary Spirits, any more then a Spirit hath of the Matter, or the Matter of Spirits; nor can any one *Species* have the Proper Quality's of another, for then they should not be such Proper Quality's of its own *Species*; And whatsoever Scholastical Notions any others may frame in their Minds, they who search into Nature itself, and consyder things as they find them therin, must confess that as they can know nothing of Matter what it is, but by the Extension, Density, and like Affections therof, so neither of Spirits what they are but by their Proper Powers, and Quality's; as it is truly said, that if a Stone could be made to have truly and Realy all the Proper Quality's of Gold, it must be Gold, and have such an Actual Composition of the Elementary Spirits, wherin those Quality's of Gold do Subsist: and however Philosophers might distinguish Notionaly, all Mankind besides would esteem it; and accept it, as true Gold. Wherefore if the Intellective Spirit of Man had, as they say, all the true and Real Property's of a Sensitive Spirit, and also of a Vegetative it must be both an Intellective and Sensitive and Vegetative Spirit, which is a Confusion, not only of *Species*, but of *Classes*: and so Man should be a greater Monster then a Mule, or the like Mist *Animals*: for so indeed there may be a Mistion not only of Homogeneous Substantial Spirits, as in all Augmentation, whereby more of the same Specifical Spirit latent in the Nutriment is taken into the Individuality and Oeconomy of the Substantial Spirit of the Principal *Compositum*, and Mist with the very Substance therof; but also Homœogeneous Spirits of the same *Classis* may be so Mist, in Primitive Generation, as in a Mule, and the like; and yet becaus it is Confusion of the *Species*, it may not continue and propagate others: for Nature doth abhorr all such Rape and Violence offered unto her, in her Specifical Oeconomys, and will not endure any Successive Multiplication of a new *Species* (as it is therefore Proverbialy said, *Cum Mula pepererit*) as well as she doth also abhorr the Abolition of any of her Regular *Species*, which are as so many Members of her great Body, and therefore God did so Extraordinarily preserv them in the Deluge. And though it is true that even Sensitive Spirits becaus they also do

Live

Live have Perception and Appetite, which are Analogous to Intellective Understanding and Will; and so also all Analogous Affections of Love, Hate, Joy, Grief, Hope, Fear, and the like Living Faculty's; as there are many such Analogy's in Nature between several Classical Spirits and Spiritual Quality's, yea between them and Matter and the Affections therof, as I have observed; yet they are still Classicaly Different, as well as there are the like Specificaly Different Analogy's between the like Intellective Faculty's and Powers in Men and Angels. And by these Analogy's and Correspondences in her several Members, Nature doth Confederate and Combine and Unite all her *Composita*, and her whole Body, and make it one Conjunct Univers in the Whole; and so doth the Human *Compositum* or Nature of Man, (which is, as I said, the *Epitome* of the Univers) thus Confederate and Combine and Unite all the Classicaly Different Natures in itself. Thus there is both such a Combination and *Compositum* of the Whole, and also a Classical Difference of the several Natures in themselvs, as so many parts and Members therof, which yet are not Mist or Confounded one with another any more in the litle *Compositum* of Man, then in the great Body of the Univers; wherin certeinly they are so Different, otherwise there should be no such Differences in Nature; but either *Materia prima*, or *Anima Mundi*, or both might be Eminently all things; which I have before sufficiently refuted. And it may Sensibly appear that there are such several Spirits in Man, by their several Operations, which are not only Naturaly Different, but Actively Contrary, as I have shewed, and cause a Conflict in him, as it were between two several *Animals*; for so it is confessed by all Philosophy, that the Sensitive Spirit doth Rebell against the Intellective, for the Sensitive Imagination and Appetite, or the Intellective Understanding and Will, do never so resist and oppose one another; but what the Imagination determineth, and so representeth to the Appetite, as Sensual Good, or Evill, the Appetite accordingly Affecteth, or Disaffecteth it, without any Renitence or Regret; and so it is also between the Understanding and the Will: but the only Dispute in the same Spirit, Sensitive, or Intellective, is in the Deliberation concerning several Sensual or Intellectual Objects, or Circumstances therof, and the like, before the Imagination,

Or

or Understanding, can judg and determin that this, or that Object, so Circumstantiated, is Sensualy, or Intellectualy, Good, or Evill, or Better, or Worse: wheras after the determination is once past, the Appetite doth follow the *Ultimum Dictamen* of the Imagination, and the Will of the Understanding without any the least Renitence and Regret, most Spontaneously, and Voluntarily. Wherefore such Opposite Operations as are commonly between the Sensitive Imagination and Intellective Understanding, and Sensitive Appetite and Intellective Will, plainly declare that the Intellective and Sensitive Spirit in the same Man are Realy different, as well as they are so in Brutes and Angels; yea and more evidently, becaus there is no such Conflict in either of them, who are wholy Sensitive, or wholy Intellective; and though the Sensitive Spirit in Man did perfectly submitt to his Intellective Spirit in his first Creation, yet they did then also as Realy Differ in their own Natures, which are not altered by the Fall, and as they now do as much Naturaly Differ when they agree, as when they disagree; though the Actual disagreement doth more Sensibly manifest the Natural Difference: as Actual Heat and Cold, Moisture and Drines declare the Elementary Spirits to be Different Substantial Principles; and though they being all of the same *Classis*, may be united into one *Mistum*, and their Qualitys into one equal and agreing Temperament, yet the Sensitive and Intellective Spirits in Man being Classicaly Different, neither themselvs, nor their Facultys, nor Operations, can be so Mist; and so any Man may feel in himself, that when in such a Conflict, the Will, which is Intellective, doth prevail and Over-rule the Operation, the Sensitive Appetite doth not mingle itself with it, but as it were also by itself reluct and repine, and assoon as it can return to its own Sensual Cours: and when the Appetite doth prevail and overrule, the Will doth in like maner mourn, and bewail itself, and assoon as it can return to its own Rational Cours: which Sensibly satisfieth me, that they are and remain such Different Spirits, or Substantial Principles, Facultys, and Operations, though they be all in the same Human *Compositum*. And wheras it is said, that the Human *Embryo* first lives the Life of a Vegetative Plant, then of a Sensitive Brute, and lastly, of an Intellective Man, though I have shewed how it indeed begins to live the Sensitive and Intellective Life together in one

one and the same Instant, and so it is said *Man became a Living Soul*, or Person, becaus they are both truly and properly Lives, and the Intellective Denominates the whole Person, Man.: and assoon as the Sensitive Life dieth, and the Breath, which is the Instrument therof, ceaseth, and expireth, the Intellective also departs; and as long as the Sensitive Life remains, though in any *Deliquium*, or the like, the Intellective continues; and so the Wise-man saith of men, *as one dieth so dieth the other, yea, they have all one breath:* yet it is very true, that the Vegetative Life, as they call it, is before the Sensitive, as may appear by the *Punctus saliens*, in the Formation of the *Fœtus*; and wheras they say, that this is only the Operation of the Sensitive Soul in a Brute, and of the Intellective in a Man, so Operating Eminently by those Inferior Powers which it hath in itself, before it can exert its own Proper Superior Powers, it seemeth to me very Absurd and Improbable, that it should putt forth any such Eminent Powers which must Subsist in the Proper Powers, before those Proper Powers be Actuated, wherin it must Subsist; as Emanant Light, or Heat, are Potentialy, that is Formaly, and not only Eminently, in Inherent, but certeinly cannot be Actualy exerted before the Inherent be Actuated, and doth Operate Actualy: though indeed, as I have said, no Proper Quality of one Specifical Spirit can be, Actualy, or Potentialy, in another, either Immediately, or Mediately, as the Proper Qualitys of the same Specifical Spirit may be: and so as Emanant Light, or Heat, doth Immediately Subsist in Inherent, and Mediately in Æther or Fire. Wherefore there are three such distinct Spirits, Intellective, Sensitive, and Vegetative, in the Human *Compositum*; and also the fower Elementary Spirits (and they only Mist together in one) nor hath ever any yet affirmed that they also were Eminently in all or any of the others, as that the Intellective, Sensitive, or Vegetative Spirit, is Eminently Hott, Cold, Moist, or Dry, or the like: and yet they might and must affirm this as well as the other, becaus they also are Spirits, and not the Bodily Matter. And thus there are indeed, speaking plainly, Seaven Different Spirits in every Human *Compositum*; not Possessing it or the Body of Matter, (as the Seaven evill Spirits did, which our Savior cast out of *Mary Magdalen*) but Informing, that is, Inspiriting it Naturaly, and according to the whole Scale of Nature, wherof they are all the Classical Spirits:

and if they were not all in the Human *Compositum*, Man should not be truly the *Epitome* of Nature, or any such Microcosm in himself: but as certeinly as he is Composited of Matter and Spirit, which yet remain distinct and different Natures in one and the same *Compositum*, so he hath also all the Inferior several Spirits in him as well as the Matter, and the Matter as well as them; all which together are his Human Body, and not only the Matter, and Elementary Mistion. And now, becaus I know that this affirmation of so many several Spirits in every one Man will seem very strange to any, who doth not attend, and rightly consyder, the true System of Nature, as it is described in this History of Creation, both Proper, and Improper; and becaus many Christian Philosophers, who strongly maintein and affirm the Proper Creation of the World against all Atheism and Heatheniśm, yet do not heerin also, as they ought, oppose the Improper Creation by God against Human Philosophy and Inventions of Men from which they have derived some preconceived Notions, which are their only Objections against this Doctrine; I shall recapitulate briefly what I have formerly more fully declared, whereby they shall plainly understand that the Objections are only Notions, and that it is not, nor can it be, Realy so in Created Nature. Thus, as I have said, God the Creator is the only true Eminence, or Eminent Causality; who comprehending all Possibilitys, not Formaly, but Eminently, in his own Infinite Omnipotence, could, and did Create, what he pleased from Absolute Nonentity, and so still doth comprehend all Created Entitys, not Formaly, but Eminently in his own Infinite Entity in an Infinite and Incomprehensible maner: but as it is Impossible that any thing should be Generated Actualy, wherof there is only a Nonentitative Possibility, and no Entitative Potentiality (as I have distinguished them) becaus Generation is no Creation; so it is also Impossible that any Natural Agent should Act or Operate by any Power, which it hath not Formaly in itself, but only Eminently, as they say: for if it can so Act and Operate, then it hath Formaly that Power whereby it doth so Act or Operate; otherwise it should Act or Operate without the Formal and Univocal Power; or it should have it, and not have it, both which are equaly Impossible; and so they say, that the Soul of Man doth Sens, and Vegetate, and the like, and yet hath no Sensitive, or Vegetative Powers, and the like,

like, or that it hath them Eminently, and not Formaly; that is, it hath them, and it hath them not. But since it is most certein that the Human *Compositum* doth Sens, and Vegetate, and is Hott, Cold, Moist, Dry, Realy and Formaly, as well as any Beast, or Tree, or Stone, or the like, it is most evident that it hath Formaly the Sensitive and Vegetative and Elementary Powers, and Qualitys, as well as they: and then by their own Argument, becaus the Intellective Soul cannot have them Formaly, there must be also in Man a Sensitive, Vegetative, and all the fower Elementary Spirits, wherin they do Formaly Subsist. Again, becaus God is Infinitely one most Simple Essence, therefore he doth also Act and Operate by his Essence; but all Created Substances (even Angels themselvs, as I shall shew heerafter) are not Simple as God, but have their Substances and Accidents, and Act and Operate by their Accidental Powers and Qualitys, and so their Nature is composed of Substances and Accidents. And the mutual Conversation of one Substance with another is by their Accidents that are their Emissarys and Agencys, and which meeting and joining together, (as Light with Color) by their Conjunction, and mutual Action and Passion, the Operation is produced, (which, as I have said, cannot be in Vacuity, or without some Contact Corporeal, or Spiritual) and as we thus Act and Operate Immediately by Accidents, and upon Accidents, so by them Mediately we know Substances of other things, and not otherwise. Thus the Intellective Soul doth Act and Operate by Understanding and Will, and by their proper Irradiations and Eradiations, as I shall shew heerafter; and so the Sensitive Soul by its Imagination and Appetite, and their proper Irradiations and Eradiations, as I have shewed before: whereby we know them to be what they are, and therefore since Man doth thus Sens, as well as Understand, and the like, he hath also Substantialy in his *Compositum* a Sensitive, as well as an Intellective Soul, and the like; otherwise we must affirm his Intellective Soul to be also a Sensitive Soul, which is to confound Natures Classicaly Different; and we may as well affirm it to be Vegetative, and Elementary Spirits, and Matter itself, which all make the Human *Compositum*. Again, as Matter, being an Imperfect Substance, must be Composited with Spirits to perfect it; so every Spirit that is Inferior is more Composited with it and others; and the more Superior less, as I have shewed: and this *Compositum* doth

not produce any new Substance which is *Forma Compositi*, nor is any such introduced into it *aliunde*, but it is only the Result of the Composition itself, and the Real Relation therof, not Abstractly and Metaphysicaly; as Entity, *Genera*, *Species*, and the like, but Concretely and Homophysicaly, as I may term it; as the Univers, all Animals, all Men, and the like, which are also so many Physical *Individua*: and so is the Human *Compositum* or Man, so many Physical Spirits and Matter Composited together. (And this is only a Natural Corporation, wherin the Intellective Spirit Predominates, and so Denominates the *Compositum*) and the *Forma Compositi*, which is one, is only the Result therof, and according to the Scale and Oeconomy of Nature the *Composita* are thus Naturaly United together: for so the Elementary Spirits do Immediately Consubstantiate the Matter of the Body of Man, and are all fower Mist together, and have their fower first, and such other Elementary Qualitys, (which are yet Occult and unknown to us) Actuated therin, as well as in any other Elementary *Compositum*, Stone, Wood, or the like, that is, in the Primigenious Mistion and Temper of the Bloud, whereby, and wherof, the Flesh, Bones, and all the parts of his Body are Constituted severaly and respectively, by the Operation and Distribution of the Vegetative Spirit, which doth so Plasticaly Govern and Vary the Elementary Mistion and Qualitys therof, as it doth the Matter and Extension therof so Qualified; and so form and frame the whole *Compages* of the Body Organised and Erected thereby: and the Vegetative Spirit, which doth so Govern and Vary the Elementary Spirits, doth Immediately Consubstantiate them, as they do the Matter; for as they cannot be and Operate without the Matter, nor the Matter become the Body of Elementary Spirits without them; so the Vegetative Spirit cannot be produced, nor Operate without the Matter, and Elementary Spirits, nor they become the Body of a Vegetative Spirit without it; nor can the Sensitive Spirit be produced and Operate without the Vegetative and Elementary Spirits and Matter, nor they become the Body of the Sensitive Spirit without it; and thus also the Intellective Spirit is not before Inspired, nor can now Operate without the Sensitive, Vegetative, and Elementary Spirits, and Matter, nor they become the Body of an Intellective Spirit without it, and wherof not one, nor fome, but all together are the Body: but contrarily there may be an Elementary

mentary *Compositum* of the Body of Matter and Elementary Spirits without a Vegetative Spirit, as Stones, Metalls, Minerals, and the like; or a Vegetative *Compositum* without a Sensitive Spirit, as Grass, Herbs, Trees; or a Sensitive *Compositum* without an Intellective Spirit, as Fishes, Fowls, Beasts; according to the Oeconomy of Nature; as I have formerly shewed, and now more fully approved by the Human *Compositum*, which so Comprehends them all, and in the same Order. Also, as I have supposed, that there is a proper Elementary Mistion Subordinate to the Vegetative Spirit, and a Proper Vegetative Spirit to the Sensitive Spirit, and a Proper Sensitive Spirit to the Intellective Spirit of Man, so this likewise may appear in the Human *Compositum*; for so it is said, *All Flesh is not the same; for there is one Kind of Flesh of Men, another Flesh of Beasts, another of Fishes, and another of Birds*; and yet all Flesh is Elementary; and therefore the Difference must be from the Various Mistion of the Human, Bestial, and other Fleshes; and so that there is in Man a Proper Vegetative Spirit, is evinced by the Plastical Virtue therof so Effigiating his Body, and specialy his Hands, which are instead of fore-feet, and all the Natural Arms of other Sensitive *Animals*, Horns, Tusks, Beaks, Claws, Teeth, and Tails, and the like; and also his Erect Posture, whereby he differs from all others: and that there is in him a Proper Sensitive Spirit, is evinced by his Imaginative Apprehension, and Appetitive Delight of and in Beauty, Harmony, and the like, which he can also effect farr more Curiously and Artificialy then any Brute; nor are those the Works of his Intellect, but of his Imagination properly, though that may be much assisted therin by his Understanding: for many that are otherwise in Understanding almost Idiots, or Lunatikes, have most Ingenious Fansys (which yet are not Instincts as in Brutes) and wherin they farr excell the most wise and prudent men, as in Singing, Musike, Dancing, Painting, Carving, and Mechanike: but most evidently that which they call Risibility not only in the Act, but in the Power, is only proper to Mankind, and to no other Sensitive: and though I know that Philosophy hath entailed this also upon Reason, and I will not deny them such a Rational Risibility as they would have, yet certeinly they cannot deny a Sensitive Risibility, such as happens by Tickling, as well as Flebility by Beating, wherin Reason hath not any Share; but sometimes we Laugh

or Weep against our Will; and it is only a Sensible Titillation, or Verberation of the Flesh, and a Sensual Delectation, or Pain thereby, which causeth Laughter or Weeping in such cases: though there be a great Analogy between the Sensitive and Intellective Risibility, as well as between other Sensitive and Intellective Affections, which I mentioned before. And now I shall proceed to consyder another greater Question, and of greater concernment; Whether the Intellective Spirit, or Soul, as well as the Body of Man, be *ex Tradvce*, as they term it, that is, only Generated by the Parents, as the Decision of the Seed of any other Sensitive *Animals*, or Immediately Created by God? Wherin first I do acknowledg, as before, that the Sensitive, Vegetative, and Elementary Spirits of Man, as well as the Matter of his Body, are so Generated by the Parents, becaus all these are only the Human Body, as I have shewed, according to the Scale of Nature: and thus God did at first produce the Sensitive Spirit of Man by Improper Creation Immediately, as he did all other Sensitive Spirits, latent in the first *Chaos*; wherin also the Proper Sensitive Spirit of Man was so latent, as well as his Inferior Spirits, both Vegetative, and Elementary; all which were Created in the Begining by a Proper Creation: and so farr I grant a Præexistence of these Spirits, which are in all Men, as well as of the Spirits of Brutes, and Plants; which as they were afterward produced by an Improper Creation by God, and now are Generated by their Parents Successively, so God and Nature, who do nothing in vain, did then so produce them, and they do still so Generate them in Man, as well as in Plants and Brutes. But I deny that the Intellective Spirit of Man is latent in the Seed, becaus it was not so latent in the *Chaos*; nor Generated by the Parents, becaus it was not so produced by an Improper Creation, but Immediately Created by a Proper Creation; and Infused by God as it were *aliunde*, and so Inspired, as it is very fitly expressed, in respect of the maner of Infusion therof; for though God cannot be said Properly to Breath, yet as it is a Substantial Activity and Life, so it is termed *Spiritus*, or Breath; and though itself be not Properly a Breath, yet as it was Infused in the same Instant, when God also by Improper Creation produced the Sensitive Spirit, which is the other Life (and so is termed, *the Breath of Life*, which distinguisheth it from

from any Vegetative Spirit, as I have ſhewed), ſo God is ſaid to breath into the Noſtrills of Man this Breath of Life; and as by Inſpiration, the Breath aſſoon as it is out of the Inſpirer, is in the Inſpired, ſo this Intellective Soul of Man was Infuſed into him, aſſoon as it was Created by God; and thus according to the Sentence of the Scholeman, *Creando Infunditur, & Infundendo Creatur*, and was not Præexiſtent, as the Senſitive, or any other Inferior Spirit, or the Matter, (as ſome Jewiſh Rabbins and Rabbinical Chriſtians have Imagined) nor latent in any *Chaos* of Potentiality, but only *in Divina Potentia*, which can Create any Poſſible Nonentity, and produce it into Entity; wheras Natural Generation is only the production of Potential Entity, or Eſſence, into Actual Entity, or Exiſtence, as I have ſhewed. And God is ſaid to breath it into the Noſtrills, rather then any other part of the Body, becauſ thereby is the paſſage for Vapors into the Brain, which is the Centrical Seat of the Soul, as is heerby alſo intimated. Wherefore as all Succeſſive Generation is conformable to the Original, and all other Spirits which were then only produced, and not Properly Created, are ſtill Generated by the Parents; ſo the Intellective Soul of Man, which was then not produced, nor Improperly, but Properly Created (both in *Adam* and *Eve*, whom he called Fleſh of his Fleſh, but not Soul of his Soul) is ſtill Created by God, and not Generated by the Parents as God himſelf teſtifieth, *All Souls are mine; as the Soul of the Father, ſo alſo the Soul of the Son is mine*, and *Elihu* acknowledgeth the ſame of himſelf, *The Spirit of God hath made me, and the Breath of the Almighty hath given me Life.* And it is ſo Rational, that unleſs we alſo acknowledge it, we muſt affirm that our very Intellective and Rational Souls were partly in the Seed of our Father, and partly in the Seed of our Mother, and ſo by their mingling together, Miſt into one; as the ſower Elementary Spirits, or the Muline Spirits, and the like; and ſo that half an Human Soul was loſt by the ſin of *Onan*. And if the Soul of Man be thus Miſcible, then it may be alſo Unmiſt again, and is Diviſible, and conſequently Corruptible, as well as Generable; with many other ſuch Abſurditys, which do neceſſarily follow this Erroneous Opinion. Wheras we may Senſibly perceiv, that though, as I have ſaid, the Senſitive Body

dy of Man, that is, the Matter, and Elementary, Vegetative, and Senſitive Spirit be ſo Generated by the Parents, and accordingly are conformable more or leſs to their Bodily part, as an *Æthiopian*, or *Negro*, begets a *Negro*, a Moor a Moor, and an European an European, according to the ſeveral Shapes, and Colors of the Parents Bodys, not only in their Native Climes of *Æthiopia*, *Mauritania*, *Europe*, and the like, but alſo in any others, ſo long and untill the habits of the Parents Bodys be afterward altered by degrees, and ſeveral Succeſſive Generations: and ſo Hereditary Diſeaſes happen commonly in Familys: yet there can be no ſuch certein Obſervation made of any Intellectual or Moral Endowments of the Soul, deſcending from the Parents to their Children; (notwithſtanding the Inclinations from all thoſe Bodily Humors, which may ſo be derived unto them, and the great advantages of Education, and Converſation, with them, and the like) which *Virgil* had very wiſely conſydered, and ſo affirmed to *Auguſtus*, that therefore he could not judg of the Race of Men, as of Horſes, and Dogs; and it is a common Obſervation of Hiſtorians, that in Hereditary Kingdoms ſeldom two Princes of like Diſpoſition ſucceed one another. But it is moſt obſervable in the *Fœtus* of Sodomitical Copulation, that though it may in the Bodily part retein and repreſent ſomething of either Parent, Human, and Belluine, yet the Predominant Spirit, or Soul, is not ſo Miſt, as in a Mule, which is both Equine, and Aſinine; but is either Human, or Belluine, that is Intellective, or not Intellective, and having, or not having Rational Diſcourſ, and the like: though I rather ſuppoſe, that it is never Human, but alway Belluine; and that though God doth generaly Create and Infuſe an Human Soul into a *Fœtus* begott by Adulterous or Meretricious Copulation, which are only againſt the Law of Matrimony between two *Individua*, yet he doth not ſo aſſiſt in Sodomy, which is againſt the Generical Law of Nature, and the Claſſical Difference therof. And as Senſitive *Animals* of the ſame *Claſſis* that are very Heterogeneous will not ſo copulate, as Beaſt and Bird, nor Horſ and Kine, and the like, as an Horſ and Aſs will, which are more Homogeneous; ſo though Man (whoſe very Senſitive Spirit is more Heterogeneous from all Beaſts, then any of them is from another), may through

through his moſt Unnatural and Abominable Luſt perpetrate ſuch Infand Villany, (which cried to heaven and to the God of Nature for Vengeance againſt the firſt Denominators ther-of) yet commonly the *Fœtus* is ſtrangely Biform, and Monſtrous, and no fitt Receptacle for an Human Spirit; and ſo it is ſaid, *It is Confuſion.* Now though Human Parents do not, nor can they, as I have ſhewed, ſo Generate or produce the Intellective Spirit of the Child, as they do the Senſitive Spirit, and others, yet *Homo generat Hominem*, or the Human *Compoſitum*, which is the Man that is Generated, aſwell as any other Senſitive *Animal* doth Generate its like Senſitive *Compoſitum*; which may evidently appear if we remind what Generation truly and rightly is, that is, no Creation of any Poſſible Non-entity, nor Tranſpeciation, or Converſion of one Entity into another, or Production from not ſuch an Entity, Actual, or Potential, and only Poſſible; which is tantamount to a Creation; but only a Compoſition Ædification or Confabrication of Simple Eſſences before Created into one *Compoſitum*, whereby there is Generated a *Forma Compoſiti*, which was not before Actualy, but only Potentialy in all the ſimple Eſſences, wherof it is Compoſited; and which alſo have their own Simple Formalitys, whereby they are ſuch as they are, and were ſo Created by God, in themſelvs; otherwiſe they ſhould not be ſuch as they are, and indeed Abſolutely not be, in themſelvs: and when they are ſo Compoſited, there is no new Creation or Converſion of them or any of their own Simple Eſſences or Formalitys, as they are every one in themſelvs, into any other; but only the Compoſition of them all together in ſuch or ſuch a maner (which was Potentialy before in them all, otherwiſe they could not be ſo Compoſited) is now made Actualy to be ſuch a *Compoſitum* as it was not before; as any Accident Potentialy Subſiſting in the Subſtance is ſo afterward Actuated (as well as an Houſ is ſo Built as I have ſhewed) and this is the Generation, that is, *Generatio Compoſiti*, by ſuch Compoſition and Confabrication of ſimple Entitys, for there can be no Compoſition of Non-entitys. And thus as the Original Generation of *Adam*, or the whole Man, by God, was ſuch a Compoſition and Confabrication, as he is ſo ſaid to be *the Son of God*; and of the Woman, by ſuch Ædification, as it is termed; ſo is every Man ſtill

Generated by his Parents in all Succeſſive Generation, and the only Difference between the Generation of Man, and any other *Animal*, is in the Creation of the Principles or Simple Eſſences, wherof they are Compoſited: that is, whereas the Matter, Elementary, Vegetative, and Senſitive Spirits of Brutes, which are their Principles, were all before Created by God; and are afterward Compoſited by the Parents, (which is their Generation) ſo only the Matter, Elementary, Vegetative, and Senſitive Spirit of Man were ſo before Created, and his Intellective Spirit which is one Principle is Created by God Immediately, in and with the Compoſition and Generation by the Parents, according to the Law of Nature: which different Creation of the Principles by God, doth not at all concern the Generation by the Parents; that is, the Compoſition or Confabrication therof, which according to the Law of his Nature is the ſame in Man as in any other *Animal* (and therefore there is one and the ſame Bleſſing of Procreation to Man and Beaſts) wheras indeed if Generation were any ſuch Converſion or Tranſpeciation as is ſuppoſed, then Man ſhould not Generate Man, as he doth; And ſo this Human Generation doth moſt evidently prove, that all Generation is none other then ſuch a Compoſition and Confabrication, as I have declared: and thus *Adam begatt a Son in his own Likenes, and after his own Image*, and his Son *Seth* was his Seed, as well as *Eves*, in whoſe Womb the Generation was afterward conſummated, when there was an Infuſion of the Intellective Soul of *Seth* by God; wherof the Inſtrumental Union, Compoſition, and Confabrication, was by both Parents, as it is in any other *Animals* by the Male and Female: for ſo the Generation of Man by Man is according to the Law of his Original Generation, as well as of any Brute by Brute, according to the Law of their Original Generation; and whatſoever Difference there may ſeem to be between them in their Succeſſive Generations, it is none other then was in their Original Generations; according to which a Man doth Generate a Man, as well as a Brute a Brute. And ſo according to this Natural Law, and the Inſtituted Compact or Covenant of Works, which God made with *Adam* for himſelf and all his Poſterity, Original Sin and Corruption is derived unto us all, and every Mans Soul; though as it is the Immediate Work of God the Creator, it is Perfect and Incorrupt,

corrupt, (as all his Immediate Works are most Perfect) yet by this very Union and Composition, which is the Generation, it is Corrupted; as it is rightly said, *Non Corrupta Infunditur, sed Infusa Corrumpitur*: Wherefore *Jesus Christ* was not so born according to this Law of Natural Generation; and yet he is also called *the Seed of the Woman* (though his Soul was certeinly so Immediately Created by God) becaus the Union therof with the Sensitive Body was by his Mother: and as *Adam* was Created by God, both by a Proper Creation of his Intellective Soul, and Improper Creation of his Sensitive Body, so was Christs Soul Properly, and his Body Improperly Created by God; as it is also said, *A Body hast thou prepared me:* and thus as the first *Adam* was the *Epitome* of all Creation both Proper and Improper, so also was *Christ* the *Last Adam*, as the Apostle fitly stileth him, and all that was Extraordinary in this First Man, was to typify him who is therefore also stiled *the Second Man.*

IV. I shall now discours farther of the Intellective Spirit of Man, which is his Angel, or *Damon*, as it is in this Conjunct State in his Body, and as it Operates therin. And heer again we must review the Scale of Nature, and of the *Composita* therof; wherin all such as are Imperfect Substances in themselvs, and cannot Exert themselvs in their Oeconomys, nor Operate without a Conjunction with others, do therefore accordingly affect that Union, Naturaly and Necessarily, and disaffect to be disunited; which I call their Composition, and Consubstantiation, whereby they are mutualy Conjoined, and Perfected; as Matter, which is such an Imperfect Substance, cannot be pure or alone, but doth so affect an Union with Spirits, whereby it is Inspirited, Activated, and Perfected, or as they term it Informed, and so made, as it were, a Spiritual Matter: and the Elementary Spirits which are lowest and next unto it, becaus they cannot so Oeconomicaly Exert themselvs, nor Operate without a Body of Matter, as their Vehicle, Domicil, and Officine, do therefore mutualy affect an Union with it, whereby they are Embodied, and so are said to be Material Spirits: and though any Body and Spirit make a Complete *Compositum*, yet as Elementary Spirits, which are the lowest, may be more highly Exalted and Purified by Vegetative Spirits, so they also affect an Union with them, whereby they are so much Sublimated,

limated, as I have before shewed concerning the Bloud, and Animal Spirits; and the Vegetative Spirits, becaus they cannot so Oeconomicaly Exert themselvs, nor Operate without an Elementary Body, as their Vehicle, Domicil, and Officine, do therefore mutualy affect an Union therewith, whereby they are also Embodied in them, Immediately, and, Mediately in and by them, in the Matter, and so are also termed Material Spirits: and the Proper Vegetative Spirit of Sensitives, as it may be more Advanced toward the Sensitive Nature by the Sensitive Spirits, so also it doth affect an Union therwith, whereby it is so much Spiritualised, as I have shewed in the Involuntary Motions, and other Sensitive Offices and Services therof: and the Sensitive Spirits, becaus they cannot so Oeconomicaly Exert themselvs, nor Operate without their Proper Vegetative Bodys, as their Vehicles, Domicils, and Officines, do therefore mutualy affect an Union therwith, whereby they are also Embodied in their Proper Vegetative Spirits Immediately, and so in and with them Mediately in the Elementary Spirits and Matter, and so are also termed Material Spirits. Thus they all Consubstantiate one another being Localy and Oeconomicaly in the matter of their Bodys *per omnia puncta*, and so Coextended thereby, and more or less Divisible therwith, as I have shewed; Also they penetrate one another without any penetration of Extensions, becaus they have no Extension of themselvs, but only are Coextended, as I said, in and by the Matter, that is, they are in their own Vehicle, Domicil, or Officine, which they Inspirit and Inform, as their Body and Seat, from which, or any part therof, they abhorr to to be removed, or that it should be in any maner discontinued; but though they be thus Localy United, and Naturaly Composited and Consubstantiated, yet their Consubstantiated Natures are still Classicaly Different, and they are still distinct Matter and Spirits, or one Spirit, and another, as before, both in their Essences, Affections, and Operations, and do not participate of one another; for the Extension of Matter is neither Hott nor Cold, nor Heat and Cold Nutritive, nor Nutrition Sensitive, but only they are Subordinate and Subservient one unto another, as I have shewed; wheras Spirits of the same *Classis* may be not only Localy United, but Spiritualy so Mist in their Essences, Qualitys, and Operations, as to participate one of another, and be confounded one with another, as Heat and Cold are

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in *Tepor*, and the Equine and Asinine Spirits in a Mule, which are no longer a Distinct Heat and Cold, Horse and Ass, nor only a *Compositum*, but a *Mistum* of both, like the Mistion of more of the same Specifical Spirit in the Seeds of both Parents, wherof one is not Prolifike without the other, and in the Augmentation of Vegetatives, or Sensitives, Indistinctly and Confusedly. Now the Intellective Spirit of Man being a Perfect Substance in itself, and such as may Individualy Exert itself, and Operate Separately, and doth not Inhere, as Light in a Lucid Body, but is as Light in the *Diaphanum*, is therefore neither Consubstantiated with the Sensitive, or any other Inferior Spirits, or the Matter any more then an Angel, who Possesseth an Human Body; nor can it be Mist with the Angelical Nature, or any Angelical Spirit, or with more of any Human Spirit; becaus it is Immediately Created by God, a Perfect Substance in itself, Ingenerable, Incorruptible, Immiscible, and Indivisible, as well as any Angelical Spirit. And yet as there is some mutual Indigence and Opitulation in and among all Created Natures, as so many parts and Members of the Universal Body therof, so even Angels, who are most Immaterial, (not only as other Spirits, wherof none is any Matter, as I have shewed) but have least need therof, either by Consubstantiation, as they, or Inhabitation of a Body, as the Human Spirit, yet becaus they also have no Extension of themselvs, whereby they may be in their own *Ubi*, or Place, therefore must be in the Universal Body of the World, and in some part or *Ubi* therof, as Magnetical Virtue is in any *Medium* Indifferently, and when they are in one Place, they are not, nor can they be in another, nor can Instantaneously pass from one to another, nor can annihilate or evacuate the Nature of Extension, or the Density, or Gravity of Matter, nor do any thing contrary to the Law therof, nor Infinitely overcome it, but Finitely, and according to some certein proportions: and therefore Move not so swiftly through more Dens, as through more Rare Matter, nor can so easily lift more Grave as more Light, as I have shewed: and I grant that there is also such Coordination between the highest and lowest Nature, Angels and Matter; becaus they are both Natures, and Created Entitys, conteined within this Univers as Parts and Members therof, and within the Universal *Genus* of all Created Entity; but they have otherwise no Communion

nion with any particular Body of Matter, nor have any such Vehicles, Syderous, Igneous, Aereous, Aqueous, Terreous, as some suppose, whose Souls are so farr Immersed in the gross Matter, as that they cannot conceiv Angels, or any thing to be Immaterial, or without a proper Body of Matter, nor God himself, without an *Ubi*; though his Immensity be Infinite, and Infinitely Different from all that is Finite, and therefore Infinitely free from all Extension, Place, Space, or *Ubi*, or any Notion, or Imagination therof, becaus it is Incomprehensible, and such as must be acknowledged and adored, but can never be comprehended. Wheras Man, though he be more concerned in the Matter, and Material Spirits, then Angels, and so may be said himself to be more Material then they, yet as he is litle lower then the Angels, and much higher then the other Inferior Natures, (wherof also all, except the Matter, are Spirits) should more Contemplate Spirits, and their Spiritual Nature, and not wholy bury himself in Matter, who hath no such Union with it Immediately, or Mediately, but that he may Exist in his own Intellective Spirit, and Operate Separately without it in his Separate State; though as he is the *Epitome* of all Classical Natures, so he doth Subordinate all the others unto himself, as they do one unto another in this Conjunct State; and though his Proper Sensitive Spirit, as well as others, doth also Naturaly and Necessarily affect this Union, yet he doth not so mutualy affect it, as that he cannot Be, and continue in his own Individuality and the private Oeconomy of his own Spirit, and Operate Separately without it in his Separate State as well as Angels: and yet being also capable of this Conjunction or Composition as well as other Spirits, though in another maner, as I have shewed, he doth Naturaly indeed, but not Necessarily, affect it, as they do: and so is the great *Amphibium* between both, apt to live Conjunctly and Separately in both Worlds, and in the lowest Earth, and highest Superæther. And thus the Human Spirit in this Conjunct State is in the Body, not Inherently, as I have shewed, nor yet so in its Element, as a Fish in the Water, which cannot live out of it, or as a Plant that is Rooted in the Earth; but as a Master in a Ship, who can also live out of it; or, as the Scripture more aptly expresseth it, as in a Tabernacle, wherin he shall not abide long; and so the Rabbins call the Body *Vagina Animæ*. But wheras the Schoolmen say, that it is *Tota in toto*

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& tota in qualibet parte Corporis; I cannot understand it of the very Substance of the Soul, nor do I conceiv it to be Intelligible: for though I acknowledg it to be not only as a Master in one part of a Ship, as in the Heart, or Head; but like *Hercules in Urceo*; possessing and filling all the Vessel; and also that it hath all its Facultys and Powers every where in the whole Substance of itself, either Actualy or Potentialy; becauf it is Indivisible, and hath no Extensive, but only Coextensive parts, and them not so Coextensively United to the Matter, as Inferior Spirits are; yet it doth Operate Actualy in one part rather then another, (which the Scripture Comprehensively calleth the Heart, and sometimes more particularly the Head) and so indeed it must, becauf it now Operates by the Instrumentality of the Sensitive Spirit, which is Centricaly seated in the Head and Brain, and not so in the whole Body, (though it Operate Communicatively and Diffusively through the whole Body) but in other parts, where it is also, it doth not so Operate, Actualy: and as it cannot so Operate, and not so Operate in the same Place, any more then in the same Time, so becauf itself is diffused in and through the whole Body, therefore it is not all in any part therof; otherwise it should not be so diffused; and it cannot be diffused and not diffused in the same Place: and as it is all within the Body, and therefore cannot be without it, in this Conjunct State, so, if it were all in any one Part of the Body, then it could not be in any other; wherefore since it is *tota in toto*, it cannot be *tota in qualibet parte*; for both cannot be true of any Extension, or Coextension whatsoever. Nor doth the Spiritual Intirety and Indivisibility of the Human Soul alter the nature of the Extension of the Body, or Coextension of itself; nor do they, or either of them, destroy the Intirety and Indivisibility therof, which is not Local, as is supposed, but only Spiritual; as a Ray, or Orb of Emanant Light is Spiritualy Intire and Indivisible in the Lustre, or Image therin, but not Localy, (for it may be measured by so many Inches, Feet, and the like, Coextensively, according to the Extension of the Diaphanous Body wherin it Localy is) but Spiritualy, so as you cannot clip off an Inch, or an hairs breadth, of the Ray; and whersoever that is, there is also the Lustre and Image: and so you may measure a Man, both Body, and Soul, according to his Bodily Extension. Yet if a Leg, or Arm,

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or half the Body, by a *Turkish* Torture, be cut off, the Soul, or any part therof, is not divided; but as the Light retires into itself, when you divide the Diaphanous Body, so doth the Soul, which is yet Spiritualy more Intire and Indivisible then the Light; for that by Reflection is Reduplicated, and fortified more in and by that Reduplication; wheras a Man, who hath lost a Limb, is not more or less Intellective then before, becaus the Intellective Spirit is perfectly Intire and Indivisible in the Spiritual Substance, and all the Facultys therof within the Body, and more then any Emanant Quality is out of the Body; and so is one perfectly Intire and Indivisible Individuality and Oeconomy in itself, farr otherwise, and more then any Tree, or Eel, or other Vegetative, or Sensitive, as I have shewed. And I shall now endeavor to shew how the Intellective Spirit doth Operate in this Conjunct State, both in the Understanding, and in the Will: for though it be, as I said, most perfectly Intire aud Indivisible in its Substance, and in its Facultys, and Operations therin, yet as a Finite Creature, it hath its Substance, Facultys, and Operations, of several distinct Natures; and is not only Essence, and so doth Operate only by its Essence, as God the Creator, but as other Spirits, or Substantial Activitys, it also hath its Substance, Powers, and Acts; and as the Sensitive Spirit is a Life, as well as the Intellective, so it is the neerest and best Resemblance therof; having, as I said, Sensitive Imagination, and Appetite, and the rest of the other vital Facultys, respectively Subsisting therin; for so hath the Intellective Spirit an Analogous Understanding, and Will, and the rest of the other Vital Facultys, respectively Subsisting therin. Also as there is Imprinted and Implanted by God the Creator in the Imagination a general Perception, or Notion, so there is such a general Intellection or Notion in the Understanding, which I shall better explain by what I have said before of Sensation: for so as I said, this Notion is not only a Simple Operation, as all Inferior Operations are, but besides the very Operation there is a Perception therof in any Brute, whereby it is Perceptive, that it doth See, or the like, (as well as it doth Perceptively Affect, as I have said) Conjunctly in and with the Operation itself, though not Reflexively afterward, or by a farther Consyderation what Seing is, as in Man. And this Conjunct Operation is, as I said, Living, and Sensitive, and is first

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by the Power of the Imagination, whereby it so Operateth, that is, Seeth, or the like : wherin, as I have shewed, first the External Light, doth Irradiate the Colorate Object, and by the Reflected Rays therof convey the *Species* wherwith they are tinged to the Ey, and there the Internal Light doth again Irradiate them, and by the Reflected Rays therof convey them to the Animal Spirits in the Optike Nervs, and Brain, so prepared by the Vegetative Spirit to be fitt Instruments of the Sensitive Soul, and which Actuateth the Potential Images therin, so as they are made fitt to be Irradiated and Illustrated by the External *Species* ; and the Imagination, when it doth Animadvert them, doth, as I conceiv, again itself Irradiate them by a farr more Pure, Spiritual, and Sensitive Light, as I may so term it, whereby the Object, which is gross in itself, is thus Purified, Spiritualised, and Sublimated, first in the *Species*, then in the Images therof, and lastly in these Phantasms, which are, as it were, the *Species* of those Images, and the Immediate Objects of Imagination, as being most Refined and so approaching neerest to the Spiritual nature therof, and thereby most prepared and made fitt for it : and by that Irradiation of the Imagination Reflected and retiring into itself, the Sensitive Soul doth Sens or perceiv them, and withal it doth Sens or perceiv, that it doth so perceiv ; which is the other Operation that I intend, and indeed the very Vital Act therof ; and in that, and the Spontaneous Appetition, (which doth not only Eradiate and Emitt a Motive Power, or a very Pure, Spiritual, and Sensitive Heat, as I may so term it, but also doth it Spontaneously, by such another Conjunct Operation) doth Sensitive Life consist. And though I expres them as Sensibly as I can, by Light, and Heat, as we usualy call such Spiritual Qualitys *Lumina*, and *Ignigulos Animi* ; yet I do not intend thereby any such Elementary Qualitys, but farr more Spiritual, Vital, and Sensitive ; and only Symbolical, and Analogous to the other, as there are such Analogys in Nature, and as the *Species* of the Object are so Refined, as I have shewed, to render them as Spiritual and Analogous as they can be made : and though I mention only Seing, becaus it is a most Spiritual, and most Conspicuous Sens, and wherin the *Species* are more Refined by the External and Internal Light, which is the Standard therof, then perhaps the Sensible *Species* of any other Sens, in and by the Standard therof ; yet I

conceiv that their Senſible *Species* are in like maner Irradiated reſpectively (though I want other reſpective Terms to expreſs it) by the Imagination: thus in Hearing there is a Senſible Sound conveyed to the *Aura* in the *Tympanum*, though I know not, that there is any Emanation therof, nor farther Purification thereby, or in the *Aura*, (as is in Seing, which is the moſt Spiritual Senſ) but only that it is a Standard between the Senſible Sound, and the Auditive Animal Spirits in the Nervs and Brain; and that all the Images therof being Potentialy in them (as all Parts and Members of the Body are in the Bloud, and all Senſible Sounds, as I ſaid, in the Air) they are Irradiated, as I muſt ſo again term it, by them, and ſo paſs through the Auditive Nervs to the Brain, as any Sound from the firſt Colliſion, at one end of a String ſtretched and held by the teeth at the other end, doth paſs from one to the other; and ſo they are again Irradiated by the Imagination, whereby the Senſation is performed: and the Imagination doth both Hear, and perceiv that it Hears, and ſo of the reſt. And thus alſo, as I conceiv, when the Imagination doth Fanſy, as we call it, that is, Contemplate Phantaſms Actuated only by the Vegetative Spirit, at the Command, and by the Government therof, without any ſuch Irradiation by the Senſible Object or *Species*, yet itſelf doth Irradiate them more or leſs; that is Animadvert, though commonly ſo feintly and tranſiently, that they are, as I ſaid, only as Spectres of the *Species*, and paſs away, as we ſay, as quick as Thought; becauſ the Imagination, being a very Active Spirit, doth ſo paſs from one to another; and it is not requiſite that they ſhould continue longer; but give place to others: and yet ſometimes the Imagination is ſo Vehement, and doth ſo Intenſly Irradiate them, that they are as apparent, as if they were Illuſtrated by the very Senſible Object, or *Species*; as in the Inſtance of the Fireſtick, and the like, after the Object, and *Species* therof are removed, as I have ſhewed; and ſometimes alſo more permanently and ſteadily, even as if the Phantaſm were a Real Object, as in the Inſtance of him,

Qui ſe credebat miros audire Tragœdos:

and in very great and ſudden Fears and Frights, and the like, in others. Now the Underſtanding and Will of Man, though they be Claſſicaly of an higher Nature then Imagination, and Appe-

tite,

tite, yet they are all in the Region of Life, as I have said, and very Analogous in their Living Operations; and Conjunct in the Human *Compositum*, wherin the Intellective Spirit of Man doth Predominate, and as his Sensitive Spirit is Immediately Subordinate, so it is also Subservient unto it; and as the Vegetative Spirit doth Actuate the *Species*, and Phantasms, in the Animal Spirits, which are Elementary, for the Imagination, which doth so Irradiate them Immediately for itself, and thereby Sens and perceiv them; so the Imagination doth also Actualy Irradiate its own Phantasms for the use and service of the Understanding, whereby they become the most Spiritual and fitt Objects therof: and then when the Understanding would Animadvert them, it doth farther Irradiate them by its own most Pure and Mental Light, as I may so term it, and thereby understand them Intellectively, and with all perceiv that it doth so understand; and as it doth thus behold Sensible Objects, so also becaus itself is an Intelligence, it hath Intellectual Notions, and *Idea*'s therof, and much more of itself and other Intelligible things, and can Reflect upon itself and its own Operations, and understand what they are, by another and higher Act: and so likewise Abstract from all Singulars, and Particulars, and Contemplate them in their Universal Natures; as from *Album* and all or any *Alba* Concretely it can Abstract *Albedo*, and so from *Species* their *Genera*, and from all *Genera* the *Genus Generalissimum*, which is *Ens*, or more Abstractedly *Entity* (wherof there can be no Sensible *Species*, Images, or Phantasms, but only Intellectual *Ideæ*) and therefore it hath a special Art, whereby it can Command and caus the Imagination in another way to represent such Signatures therof Sensibly, and which shall represent them Intelligibly to the Understanding; and that is *per Verba Mentis*, as we call them; for as in writing I make such Visible Letters, in Long-hand, or *Characters* in Short-hand, that are the Signatures of such Intelligible Sens and Meaning, which we call Words; or as we so Discours by Audible Voice and Articulate Sounds; so by these two Doctrinal Senses, or either of them, and by the Visible, or Audible Signatures therof in the Imagination, which the Understanding doth Irradiate, and thereby read or receiv them, it doth understand its own Intelligible Sens and Meaning, which it cannot so do without them; and therefore if the Brain be hurt or distempered, not only the Imagina-

tion, but the Understanding also is accordingly hindred in its Operations, and cannot Operate Immanently in itself, nor Contemplate any of its own Innate or Acquired Notions without such Instrumentality, in this Conjunct State : and the Brain of Man is therefore larger, and hath more of these Animal Spirits in it, then the Brain of any Beast or Brute proportionably ; becaus they are such Instruments, not only of the Sensitive Imagination, but also of the Intellective Understanding in Man ; and so if the Imagination be hurt or distempered by any such particular or general *Delirium*, as I formerly shewed, the Understanding is accordingly disordered : and commonly such as the Imagination Naturaly is, such also is the Understanding ; but where there is a Prepotent Fansy, which will not be so Subservient to the Understanding, there is in such men an Extravagant Understanding ; and they, as I have said, may excell in any Works of the Imagination, and yet be almost Idiots in Understanding : which yet certeinly is an Irregularity of their *Compositum*, and not according to the Natural Conformity of both these Faculty's in their Composition: And so is a dull and stupid Imagination a great Impediment to the Understanding ; but where there is an equal Excellence of both (which is very rare) there is a most accomplished Temperament of Wit and Judgment. Nor are either Sensitive or Intellective Souls all equal, but they have their Individual, and not only Numerical, Differences, as well as Specifical ; as there is no *Species* wherof all the Indidual Bodys are of one and the same Size exactly, (which might make an Universal Standard) becaus God and Nature do in all things intend Variety, as I have shewed. Much less is there any Common Understanding, or *Intellectus Agens*, which doth Illuminate or Irradiate all particular Understandings, but there is only (as I said of *Anima Mundi*) Intelligence Genericaly and Metaphysicaly, which comprehends both Human and Angelical ; wheras every Individual Angel, and Man, understands by his own Individual Understanding ; and as God breathed the Intellective Spirit into *Adam*, so he Created in it and with it his Intellective Faculty whereby he did understand. Nor is there any other account to be given of Sensitive, or Intellective Notion, Perception, or Knowledg generaly, but that God hath so Created them, and made them to be such as they are, as I have already shewed ; becaus their Substantial Spirits in themselys are Simple Essences

Immediately

Immediately Created by God, that is, Senſitive Spirits in the Begining, and afterward produced in the Fifth, and Sixth Days, and the Intellective Spirit of Man laſt of all, together with the production of his Senſitive Spirit, which is the moſt excellent of all Senſitives, as I have ſhewed: and ſo their Senſitive, and Intellective Faculcys, alſo Created in and with them are Simple Accidents and Eſſences in themſelvs, though their Operations are produced afterward by other Inſtrumentalitys in their *Compoſitum*; into which we may, and have thus farr inquired: and this Operation by *Species*, and Phantaſms ſeemeth to differ from the Created Notions in the Faculcys themſelvs, as *Nebuchadneſar*'s Dream, when he had forgott it, did from the Revelation therof unto him by *Daniel* afterward; for ſo he had a Notion therof in himſelf before it was Reveled, otherwiſe he could not have known it again when it was Reveled; and yet he could not ſo Revele it to himſelf: as the Underſtanding cannot underſtand any ſuch Notion, which it hath Immanently in itſelf, without the Signatures therof in and by the Imagination: yet the Innate Notions therof are not like his, which was Acquired before, nor in any ſtrict ſenſ ſuch as they are called, *Reminiſcentiæ*; but Immediately Created and Imprinted in the Underſtanding by God and Nature, without which it ſhould not have been any Natural Underſtanding: nor is it only an *Intellectus Patiens*, but ſuch as can Actively of itſelf, and by the Inſtrumentality of the Imagination, Operate, and Exert them, as I have ſhewed: and ſo they are more rightly termed Anticipations, or Prænotions; which are the moſt Simple Apprehenſions of the Soul, neither by Ratiocination, or Deduction from them Naturaly, uor by Faith or Divine Illumination of God Supernaturaly: and therefore to diſtinguiſh them from Reaſon, and Faith, I ſhall call them, Prænotions, and their Operations, Intuitions, ſuch as the Senſation of Seing is, when the Ey beholds itſelf in a Glaſs; and the firſt and Fundamental of all, or any, of theſe Prænotions, is, that I am, or *Scio quod Sum*, whereby the Intellective Soul is Conſcious of its own Being Immanently in itſelf, or ſo as the Underſtanding underſtands Willingly, and the Will wills Underſtandingly, and therefore the moſt Innate and Firſt Ooject therof is its own Self; and though it is true, that it needeth the Inſtrumentality of Imagination to produce this, as well as any other

Notion, and that it cannot know that it is, but by an Intellection, which is an Operation; yet it so knows that it is, Conjunctly, in and with that very Intellection, as well as it knows that it Operates, as I have shewed; and as in order of Nature *Esse* is before *Operari*, so the Intellective Spirit must also in Nature first know that it is before it can know that it Operates, though it so knows both, in and with the same Operation in Time: nor is this the Knowledg of what it is Reflexively, which it Consyders afterward by another Operation, but only the Conscience of its own Being, or that it is generaly, which needeth no Argument or *Ergo* to itself; as *Cogitas*, or *Dubitas ergo Es*, is used by the Father, to convince another who was an obstinate Sceptike, and would deny his own Conscience, which none could manifest to himself, but only himself. But as this is the First Notion, so the Second is the Knowledg of the Operation, or *Scio quod Scio*, or that I am an Intelligent Being, and so are more Remotely and Consequentialy the other Operations of the Intellective Soul, and Facultys or Powers therof, such as are comprehended in one word, Rationality; which yet doth not properly express them all, as these Prænotions, and Faith, and the rest, and which it ought to Include as well as Reason; and though it might be so conceived Inclusive of them all, yet it is only of such Proper Facultys, which are Accidents, and not of the very Specifical Difference of the Soul, which is Substantial, and such as we know not, and therefore cannot know the Substance therof any more then we do the Substance of any other Spirits, or of Matter itself, that is, only by their Proper Accidents. Now as I thus know that I am, and that I am a Knowing Being, by a most Simple Apprehension, which is only of this Simple Enunciation, *Ego Scio*, (for so by the Egoity, as they term it, I know that I am, and that I am my self and none other; and by the *Scio* I know, that I am Knowing) so becaus I know, that I am not the first caus of my self, but a Finite Creature, who had a Begining of my Being, I know Rationaly by Immediate Deduction from it, that there is an Infinite first Caus of my Being, that is, God; and becaus I know that I am such an Intelligence, whereby I can thus know God my Creator, (whom therefore I know to be also my Preserver, and Governor) I know my Soul to be an Immortal Being, made for God himself and his own Glory, who is Eternal, and will

will Eternaly recompence me according to my prepared Capacity of Mercy or Misery: and though these be indeed Ratiocinations by way of Argument, and not such Simple Enunciations, as the other; yet becaus they are such Intimate, Immediate, and Cogent Consequences, we also call them Common Notions, as they both indeed appear to be such, in all Nations, and all Ages of the World, and by the Vote of all Mankind, and all Civil Societys therof; and are both of them so Complicated, that he who denys one, will also deny the other; and he who denys either, must presume himself to be wiser then *Solomon*, yea, then all men besides himself: and from these and the like Notions we may Consequentialy deduce others, and so one from another, Syllogistically; which we call, Reason: but we call only the first and Immediate Deductions, or Ratiocinations, Common Notions; becaus they are so obvious and evident to any Man who hath Common Reason; wheras others, which are not so Immediate, and therefore not so readily to be apprehended by every Man, whose Reason is not so Subtile and Firm as to pursue a whole Chain of Inductions, and Ratiocinations, we do not therefore call Common Notions; becaus they are not so commonly known or apprehended by all; though all right Retiocinations be indeed particularly as true in themselvs, as right Reason is generaly. And this I conceiv to be Reason; and thus God, as it is said, having sett the World in the Heart of Man, that is, an Intellectual World of Knowledg of all things Intelligible, and of their Natural Causalitys, and Effects, Analogys, Combinations, not only Singulars and Particulars, but also Universals, both Abstracted or Metaphysical, and Concrete or Homophysical, which is that general Notion or Knowledg, that I before mentioned to be Implanted in his Intellective Faculty, he is thereby thus Instructed to Reason and Discours from Causes to Effects, or from Effects to Causes, and according to Natural Analogy, and the like; and to make Propositions of Singulars and Particulars by some Universal Propositions, to which they are to be reduced, and the like. Again, as the Understanding of Man is an Intelligent Faculty, so Created by God in and with his Soul, and hath such First and Common Notions Imprinted in it by him Originaly and generaly, so God can more specialy by Divine Revelation and Illumination write in it, as I may so say, any other Notions, which

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the Soul accordingly apprehending as true and evident as well as any others wherof it hath any such Innate Knowledg, it doth therefore Believ them, without any Ratiocination; and this kind of Knowledg is called Faith, wherof there is also a Natural Capacity in the Soul; for God doth not so make a Stone, Tree, or Brute, to Believ, but only Men, or Angels. And though these be several ways of Knowledg, yet it is all one and the same Knowledg, which is Acquired thereby generaly, though of several Kinds; and the same Object may be known by all or any of these ways of Knowledg; as I know Intuitively, that I am, by a most Immediate Conscience of mine own Being, and yet I can also prove it to my self by my Operations, or any of them: and so I have proved that the World had a Begining, and yet as the Apostle saith, By Faith also we understand it. But Sensitives have only a Module of the Sensible World in their Souls, which they being Perceptive and Living *Animals* may also know in a Sensible maner, as I have shewed; and so it is possible by such Signatures, as I have said, to make them understand Sensible things; as Horses, Dogs, Baboons, Elephants, are taught by Signs, to do many strange feats, which seem very wonderfull, as indeed they are the hights of all Bestial Docility; but yet as they are not Intelligences themselvs, so neither can they apprehend any Intelligible things; as you cannot by any such Signes make them to apprehend God, or any Intelligence, Angelical, or Human; nor any Universal *Species* or *Genus*, and the like; nor any Universal Propositions, Connexions, or Conclusions, and the like; but only Sensible things, and of them only Singulars, or Particulars: neither do they Understand any thing, that is, apprehend any Sensible in an Intellective, but only in a Sensitive maner; for they cannot Intellectively Irradiate their Phantasms, so as the Understanding doth, whereby farther to Purifie and Sublimate them, and so behold them Intellectively with a Mental Light, as I have shewed: and I suppose these two Differences in the Understanding, and the like proportionably in the Will, to be sufficient to Discriminate us from Beasts; and that we need not to deny them any Perception, which they may have, that is, of any Sensibles, or in any Sensitive maner, lest they should seem too like unto Men, and come too neer us, who are thus Classicaly removed from them.

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The Will of Man is moſt Connatural with his Underſtanding, and hath its Inſtincts, as I may ſo term them, as that hath its Prænotions; not only general, but ſpecial; and thus as the Intellective Soul firſt Knoweth itſelf, ſo it alſo firſt and moſt Naturally Willeth itſelf, and all that belongs unto itſelf: and as it may Naturaly apprehend God by Deduction from itſelf, ſo it may Love him in order to itſelf, and alſo all other Intelligences and Moral Creatures: and ſo Man is *Animal Sociabile*, and hath a Natural Affection in himſelf more or leſs toward all other Men in order to himſelf, and therefore firſt and principaly to ſuch as are neereſt to himſelf, as Wife, Children, Kindred, Countrymen, and the like: which Natural Affections are all founded in that Original Inſtitution of Matrimony, as I have ſhewed, and which is indeed the Fountain of all Familys, Nations, and the like. And upon the Foundations of theſe Firſt Notions and Inſtincts, and the Immediate Conſequences therof, are all Arts and Sciences as ſo many Superſtructures built; which therefore are laid down as *Principia*, and *Poſtulata*, that none may deny who is Man, or a Rational Creature; or if he ſhall, there is no farther Entercourſ of Reaſon, or Society to be held with him, but he is to be rejected as an Irrational Brute. Alſo the way of Volition is Analogous to the way of Intellection, not only in theſe Prænotions and Inſtincts, and Rational Deductions, and Volitions, and any Natural Aſſent or Conſent, but in the Supernatural Inclinations therof, according to Divine Illumination, or Faith: for as that is not only a Light, or Revelation of the thing to be Believed, but it is an Irradiation alſo of the Underſtanding, that is, of the very Sight therof, which is thereby farther Illuminated, Purified, and Sublimated in its own Nature, ſo as to See or Believ it, not by adding any new Faculty to the Soul; for Faith is a Natural Faculty therof, or way of Knowledg, as well as Reaſon, or Intuition, but by ſuch Illumination, which is according to the Natural Capacity therof, and not contrary unto it; though the Illumination, that is, both the Light Reveled, and alſo the Sight of the Underſtanding Purified and Sublimated, be ſo farr Supernatural; ſo Divine Inclinations of the Will are not only as Moral Perſwaſions or Tentations, which may prevail, or not, but ſuch Purifications and Sublimations of the Will, whereby it is alſo enabled to will, or Actuate its own Willingnes accordingly;

which is alſo according to the Natural Capacity therof, and not contrary unto it, though the Inclinations be ſo farr Supernatural. Again, as the Underſtanding cannot Operate without the Inſtrumentality of the Imagination, ſo neither can the Will; for it follows the *Dictamen* of the Underſtanding, and therefore Operates only with it and by it; and as the Imagination doth Spontaneouſly Perceiv, and the Appetite Perceptively Affect, ſo the Underſtanding doth Voluntarily Underſtand, and the Will Underſtandingly Will: and though the Appetite and Will, after they are Illuſtrated by the Imagination and Underſtanding, can Executively Move their own Inſtruments; yet as the Appetite can only Move its own Motive Spirits, and thereby the Body, and ſo thereby other Bodys; ſo the Will of Man in this Conjunct State, uſing the Inſtrumentality of the Appetite, as the Underſtanding doth the Inſtrumentality of the Imagination, can only ſo Move by and with the Appetite. And as there are ſeveral other Facultys of the Imagination, as Judgment, Ingeny, Memory, and the like, and of the Appetite, as all the Affections, and the like; ſo there are ſuch Analogous Qualitys, not only in Human, but alſo in Angelical Underſtanding, and Will; becauſ, as I ſaid, they are all within the Region of Life; and theſe are Living Facultys, and ſuch without which Life ſhould not be Life generaly, that is, a Knowledg of what they do, with a Delight in ſuitable Objects and Operations, and Abhorrence of the contrary; which indeed is Life, and is by this double Operation, or Super-operation of the Living *Animal* upon its own Operations, as I have often ſaid, wherof no Inferior Nature is capable; and therefore, as I ſaid, Vegetatives do not thus Live, and much leſs Elements, or Matter: for though they alſo Operate more or leſs, and by thoſe Principles, which the moſt Wiſe and Powerfull Creator hath Imprinted in their Natures, can produce ſuch Conſtant, Regular, and Oeconomical effects, in their Simple Operations accordingly, yet they cannot Perceiv or Review their own Operations, nor have any Sentiment, or Enjoiment therof, as Senſitives, and Intellectives, which are Living *Animals*; but are as the Dead Carcaſs of the World, wherof theſe only are the Living Spirits: and thus Senſitives live a Senſitive, and Intellectives an Intellective Life. Now though we do not know, nor will I preſume particularly to declare, the way and maner of Angelical Operations;

Operations; yet generaly, as I know that they are Intelligences, or such Intellective Lives, so I know they have Understanding, and Will, and all the Analogy of Life, which the Scripture most plainly declareth unto us; and much more that they are Creatures or Created Natures as well as others; and that they are no such *Dii Minores*, as Platonists, and some Platonical Christians, would make them: and though they be Immaterial, and most Spiritual of any Spirits, yet they are only Spirits Genericaly, as others, and are no such Phantasms and Spectres, as Scholemen would make them; nor so wholy unconcerned in the Matter, and the Univers of all Common Nature, and Entity, and Finite Bounds therof, which God hath sett to all Substantial Beings, and to all Quantitys, and Qualitys therof; wherefore they can no more ascend above the Circumference, then descend below the Center of the wstole Globe of the World; becaus there is no *Ubi*, or Locality, beyond it; and Locality is a Common Accident, or Affection of all Created Beings, as well as Time, and Number (and certeinly no Angel is Elder then he is, or more then One) nor can they Nullify or Evacuate the Nature of Extension, Density, or Gravity, so as they should not be more or less such to them, as they are in themselvs, and as well as they are unto all others, as I have shewed. But as we may conceiv by all other Spirits what they are, that is, Substantial Activitys; so we must also acknowledge Angels to be the most Spiritual of all Spirits; and though, according to the Oeconomy of Universal Nature, they are concerned in the Matter, or Body of the World, as well as others; yet neither are they so Immersed as Elementary, nor Rooted as Vegetative, nor United as Sensitive, nor Confined therin as Human Spirits are; which can neither Understand, Will, nor Move themselvs, otherwise then by the Instrumentalitys of their Bodily part in this Conjunct State, as I have shewed: for though Angels also are parts of the Universal Oeconomy of the World, as I said, yet they have their own Private and Individual Oeconomy wholy in themselvs, and need none other Instrumentalitys, whereby to perform their own Operations Immanently, and they can also Transiently Operate upon all others in a most Powerfull and Wonderfull maner: but as they are Spiritual Substances, so they have their

Accidental Facultys and Operations, and do not Operate by their Essences, as God, who is a Pure Act; wheras all Created Operation is between Accidents, which were Created for that very end and purpose, that Substances might Operate by them, and that they might mutualy Operate upon them by their own Accidents, as I have shewed. And though Angels Operate by their own Inherent Facultys and Qualitys Immanently in themselvs, and may produce their own Contemplative *Ideas* in themselvs, and Move their own spiritual Substances, yet certeinly they cannot Contemplate any External Objects without some Emanant Irradiation therof whereby they bring back to themselvs the most Pure and Refined *Species* of the Object, and probably more Pure then the Human Understanding doth Contemplate in the Phantasms, which it doth Irradiate, by its own Inherent Light: and so they can Move Corporeal things, not only by their Inherent Qualitys, as they may Bodys, which they Possess, but probably by an Eradiation of their Motive Power: for if Inferior Natures can so Move at a distance, as Emanant Heat can Attract (and so some can suppose that the Sun by its Rays may Move the Earth about him, though, as I said, that Motion of Heat is only Attractive, and not Circumlative, nor hath it any Imaginable strength at such a distance so to move the vast Body of the Earth about it) certeinly Angelical Power is farr more both Intensive, and Extensive; which, whatsoever it be, I shall not presume to determin; but rather inquire into that which doth more concern us, that is, what knowledg they may have of our Cogitations, or how they Tempt us? and as I conceiv, that our Understanding doth read in the Book of our Imagination and Phantasms therof, which it doth Irradiate, as the External Light doth a Book wherin we read; so Angels also may read therin the same *Verba Mentis*, or Signatures, though they cannot know how we Irradiate them, or Animadvert, or what Apprehensions we have of what we so read, nor what are the Immanent Actions, Motions, and Inclinations of our Understanding or Will, otherwise then by the Execution and Effects therof, (for so only God is *Cardiognostes.*) And as they may thus read in our Book, so they may also write therin; as first they may Actuate any Sensible *Species* in any of the Standards, and thereby Irradiate the Animal Spirits,

rits, and so present them to the Imagination; which yet may Animadvert, or not, as it pleaseth, becaus it is Spontaneous; also they may Actuate the *Species* Immediately in the Animal Spirits, and present them to the Imagination so strongly and vehemently, that they may seem thereby to appear unto us in any Visible shape, or to utter any Audible Voice, or the like: and they may stirr up Bodily Humors within us, and the Motive Spirits, and Fluxes or Refluxes therof, to tempt, but cannot force the Will: and if they appear outwardly, it must certeinly be by assuming some Superficial Bodys; for they have no such Sensible Qualitys, or *Species*, or Phantasms, in themselvs, and therefore must borrow some Bodys that have them. Now though they cannot force us to Animadvert their Tentations, and much less Incline our Wills, yet this is a very large and wide entrance, which they may thus have into our Souls; but though I suppose that they have so now generaly, yet I also conceiv, that they could not invade Man in his first Creation; (as *Adam* was restrained from eating of the forbidden fruit,) and also that they cannot now invade us, or our Lives and Estates, (as otherwise generaly they might) being restrained by the Divine Power, as before by the Divine Command, as *Satan* himself told God, that he had made an Hedg about *Job*, and his houf, and all that he had, on every side; and he could not infest him, untill, nor any farther, then he afterward obteined Licens from God: and I conceiv, that ordinarily God doth suffer him to tempt great Sinners, who give themselvs up unto him and his Government; and so God suffred a Lying Spirit to seduce *Ahab*, and his falf Prophets, and the Divel entred into *Judas*, and the like: And thus Witches by their Invocations, and others by their Execrations, and the like, may themselvs open the door unto him; and he doth more or less make his approaches unto us, in a Spiritual or Corporeal maner, as we give him acces by our own Invitation, Admission, and Enterteinment of him; and when he appears to men, yet commonly he doth not speak untill he be first spoken to by them. Thus the Angels excell in Knowledg and Strength; and the hight of all the Excellency of the best of Angels, is their Knowledg and Love of God, the Infinite Creator, whose Menial Servants they are in Heaven, and are said always to behold the Face of God; not, as some conceiv, that they can possibly have any

quate *Idea* of Infinite; becauſ they are Finite; and ſo they are alſo ſaid to cover their Faces, as being dazled and amazed with the apprehenſion of Incomprehenſible Infinity: and I ſuppoſe, there is no ſuch preſumptuous man who doth, or can conceiv, that he knows more of God heer, then an Angel in Heaven realy knoweth, that he doth not, nor can he know of him there. Yet their beholding the Face of God, is, as I conceiv, not by Deduction or Argumentation, as we now know him darkly, as in a Glaſs; but by a Divine Irradiation upon their Intellects, according to the utmoſt Capacity of Intuition or Viſion, whereby they ſee God by his own Light, as we ſee the Sun: and as they ſee him as he is, who is Infinite, ſo they do alſo moſt humbly and ſenſibly acknowledg that there is Infinitely more in him then they do, or can ſee, or knew of him: wheras we aſcend to the knowledg of Gods Infinity Naturaly by ſteps and degrees; and as we Abſtract Univerſals from all Singulars and Particulars, whereby we come to the Knowledg of Metaphyſical Entity, and Bonity, ſo we alſo Abſtract from him all that is Finite; and thus know him to be Infinite, the Incomprehenſible, Neceſſary, and Univerſal *Jehovah*; not only adequate to our utmoſt Apprehenſions, but vaſtly exceeding them; and not only exceeding them, but Infinitely Different from all that is, or can be, conceived of him, *God bleſſed for ever.* And this Knowledg of God, who is the higheſt and greateſt Object, according to the utmoſt Capacity of a Finite Underſtanding, and the Love of him, who is the chief and only true Good, is Naturaly in all men Explicitely, or Implicitely; becauſ every Human Soul is capable therof, and muſt acknowledg it, as I have ſhewed; which doth ſo enlarge it, that all this World, and a World of Worlds, which are all Infinitely leſs then God, can never ſatisfy it, ſo that neither the Underſtanding nor Will of Man can Terminate in any other thing, but only in God; and heerby it plainly appears, that though the Soul of Man be not Infinite, as God only is, yet it is moſt ſtrangely and wonderfully Indefinite, becauſ nothing leſs then Infinite God can ſatisfie it; Yet I ſuppoſe alſo, that it is not Properly Indefinite, as Poſſibility is, which is adequate to Divine Omnipotence, and wherof we cannot, either in our Underſtanding or Will, go to the utmoſt Extent Affirmatively, yet certeinly Negatively nothing leſs then Abſolute Poſſibility, and Divine Omnipotence wherin it is founded, can Termi-

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nate the Soul of Man which can invent other and more Worlds, like *Anaxagoras*, and wish to conquer and enjoy them, like *Alexander*.

V. I may not omitt to speak of the Image of God in Man, which is so Expresly mentioned, and Emphaticaly repeated in the Text: though, as I said, God being Infinite, and Infinitely Different from all Finite Nature, there is not, nor can there be, any thing like unto him, in any Intuitive or Representative maner whatsoever; as the Prophet saith, *To whom will ye Liken God, or what Likenes will ye Compare unto him?* but only Demonstratively, and Doctrinaly; whereby an Intellective Spirit may know, that there is such an Infinite Being, as I have shewed: and so the whole World, and every Created Being therin doth prove him unto us Argumentatively, though nothing can declare him Representatively: and therefore God doth justly abhorr all such Representative Idolatry, and is to be conceived only by an Intellectual *Idea*, which is the highest, and purest, and only lawful *Idolum* of a Deity. And thus as the Great World, so Man, as he is a Microcosm, is such a Demonstrative Image of the Creator, becaus he is a Collective and Representative Image of the whole Creation; and he is so not only in his Intellective Spirit, but also in his whole *Compositum*; and therefore God pronounced Murder, which is a violent Dissolution therof, to be Capital; *for in the Image of God Created he Man.* And though Man in himself, by his Intellective Spirit, doth Govern and Rule over his Sensitive part, and can rectify the Errors therof, or restrain the Inordinate Motions therof (whereby I have plainly proved it to be another Spirit in itself, and distinct from the Sensitive Spirit in Man), yet by his whole *Compositum* he doth Govern and Rule over all Inferior Creatures, and therin he is the Image of God, as it followeth in the Text, *and let them have Dominion*; and so *Ovid* well expresseth it,

Finxit ad Effigiem moderantûm cuncta Deorum.

and thus, as I said; Man was constituted Lord over the Works of his hands, and made Gods Viceroy heer on Earth, by a most Lawfull and Natural Sovereignty; and accordingly God hath Crowned him with Glory and Honor, and Invested him with Roial Power; both in his Mind, which is more Politike and Prudent, and more Ingenious and Mechanical, then any Brutes,

and

and alſo in his Body, which is of an Erect and Sublime Stature, and of a more Excellent Temper and Organiſm, eſpecialy his Hands, whereby he can Uſe and Manage any other Inſtruments farr otherwiſe, and to more advantage, then they: and as Man is *Animal Politicum*, ſo Mankind by Conjunct Wiſedom and Power doth Subdue all Wild Beaſts, and Nations of Brutes. But the Intellective Spirit of Man is a more Special Image of God in itſelf, as it is an Intelligence, and hath in itſelf an *Idea* of Divinity, and a Capacity of Loving and Enjoying God, wherof all Inferior Natures are Incapable; and indeed we may juſtly admire how a Finite Intellect ſhould be in any maner capable of apprehending Infinite, or of having any Communion or Converſation with God, who is Infinite: and this our very Subordination unto him is farr higher then our Sovereignty over all Inferior Creatures; which, as they were made to Serv us, ſo alſo to Demonſtrate and declare his Glory, ſhining in them, unto us, who as Gods Stewards ſhould gather in all the Revenues therof from them, and Immediately return it unto himſelf: wheras their Immediate Goodneſs and Perfection is thus to be Subordinate unto Man, who by his more Divine Contemplations, and Lawfull Uſe of them, and his Glorifyng of God the Creator thereby, doth Sanctify them; and by his own Immediate Knowledg, Love, and Enjoyment of God his Creator, is himſelf as it were Deified; and indeed this is the true Spiritual Image of God in the Soul, which is the higheſt Exaltation therof, and ſuch a Sublime Myſtery, as well deſerveth a more particular Explication. And firſt we muſt know, that the Knowledge, and Love of God, as God, muſt be above the Knowledge, or Love of our very Self; becauſ God is Infinitely above us; not only in himſelf, but in Relation unto us, as he is our Creator, and we his Creatures; whereby we are made wholy Subordinate unto him, and not he unto us: wherefore to Know or Love him in order to our Self, is no true Knowledg or Love of God, as God, but Blaſphemy, and Impiety: and yet, as I have ſhewed, Self is Naturaly the Begining of all our Knowledg, and End of all our Love, and no Man Naturaly can Know, or Love God, otherwiſe then in order to himſelf; which is to make Self his God, or his Chief and Supreme, and God only to be Subordinate therunto: nor can any

Nature

Nature whatsoever Naturaly of itself ascend above itself (as Water cannot ascend above its Level) otherwise Self should be more then Self, which is Impossible. Now wheras the Law of God commandeth us to Exalt him above ourselvs, and to Love him with all our *Valde*, in such a Transcendent and Supernatural maner, we must also conceiv, that he doth not command Impossibilitys; but that there is a Natural Capacity in our Soul of being thus Exalted above our Natural Self, which must be by a Supernatural Power so Exalting us; and becaus it is the Exaltation of our Intellective Understanding, and Will, therefore it must not be only a Passive or Receptive Capacity, but with a most Conscious Knowledg, and Freedom of Will; by a Revelation of the Light of the Object, and also by an Illumination of the Sight of the Understanding; and not only by a Moral Perswasion, but also by a Divine Exaltation of the Will. And thus Man, being made such an Intelligent Creature, had a Natural Capacity of being so Exalted toward God; and becaus it was most Congruous that this Capacity should be filled and completed, in, and with the very Creation of his Soul, which was made for this very End, and which, if it had not atteined, God had made it in vain, and so it had been made, though not Sinfull, yet Monstrous, and not Perfect and Good, therefore it is said expresly, that he thus Created Man in his own Image, that is, this Image of Holines, as well as in other respects; and as I have shewed, how every other Nature is Exalted by a *Melior Natura*, which is Superior unto it, in the Scale of Nature; as Matter by Elementary Spirits, and they by Vegetative, and they by Sensitive, and the Sensitive Spirit of Man by his Intellective; so is his Intellective Spirit also Exalted by the Divine Spirit of God his Creator; and as the Animal Spirits in his Body are so many times Refined and Sublimated to that hight as to be fitt Instruments of his Intellective Spirit, by the Irradiation therof; so is the Understanding, and Will of Man, thus Sublimated by the Irradiation of the Divine Spirit; and as the Understanding, and Will of Man, when he was first Created, did Perfectly Command and Rule his Imagination and Appetite, and they did also Perfectly Obey, with their own Natural Perception, and Spontaneity; so was the Soul of Man first Created thus Obedient and Conformable to the Divine Spirit, most Knowingly and Willingly, with its own Natural Intellection and Volition: and thus, as it is said, *God made Man Upright*,

right, and in his own Image, which was that *Aliquid Divinum* in him, whereby he was so made, *Deiformis*, or as Scripture more fully expresseth it, *Partaker of the Divine Nature*, by resolving himself into his Creator, Intellectively Knowing, and Willingly Loving God, as God, or as he is in himself, and as he Loveth himself above all. But I do not conceiv that this Life of Grace (as it is also called the *Life of God*) is so expressed by *Spiraculum Vitarum*: for this History of Creation intendeth not Accidental, but rather Substantial Lives, as the Poet termeth them,

Inde Hominum, Pecudumq; genus, Vitæq; Volantûm.

Also as Naturaly the Imagination, and Appetite, being in themselvs Perceptive, and Spontaneous Facultys, might Rebell against the Intellective, and they did Actualy so Rebell in the Fall of Man; so also, (though this Original Grace was so farr Supernatural) there was still a Natural Capacity in his Intellective Understanding and Will, (which are in themselvs Naturaly Knowing and Willing Facultys) to Rebell against the Divine Spirit, (who also if he pleaseth is Irresistible, becaus he is God) and they did Actualy so Rebell in his Fall; whereby his Soul did sink down into Self, and now hath not, nor can it Naturaly, have, any Knowledg or Love of God above itself, as I have shewed. And this is that which the Scripture commonly calls Flesh, as it is opposed to the Divine Spirit, and the Supernatural Work therof in the Soul; and so those two are said to be contrary one unto another; and not only different (so as the Corporeal Flesh of a Sensitive Body is distinguished from the Sensitive Spirit, and so is termed the Flesh of Beasts, Birds, or Fishes; nor as the whole Sensitive *Compositum* is sometimes distinguished from Intelligences, as it is said, that Horses are *Flesh, and not Spirit*), but as the whole Human *Compositum*, both in the Sensitive, and Intellective part therof, is now Naturaly opposed to the Divine Spirit, as I have shewed: and so, the Apostle saith, *The Natural Man* (or the Animal Man Naturaly) *receiveth not the things that are of God, for they are Foolishnes unto him; neither can he know them*, (or conceiv and receiv them) *becaus they are Spiritualy discerned.* And all this may most plainly appear by the Renovation of this Divine Image by the Spirit of God, which is called the *New Creature*, and *New Man, which is renewed in Knowledg after the Image of him that Created him:* though I do not suppose it to be by any Proper Creation of any new Faculty, or Power in the

the Soul, but by Improper Creation, that is, by Supernatural Irradiation of the Divine Spirit, such as the production of any Accidental Qualitys out of the first *Chaos* in the Six Days was by the Divine Power, and wherof, though there was an Entitative Potentiality before, Created in and with the Substance, and Subsisting and Latent therin, yet it could not be produced into Actuality, without the Immediate Power of the Divine Spirit, as I have shewed, and that therefore it is termed a Creation, and is not, as Natural Generation, which is only production out of a second *Chaos* of Potentiality, as I so term it, by a Natural Power Transmitted and Delegated to the Specifical Creatures afterward by the Divine Benediction, whereby they can so Generate others; and so the Apostle also saith with an expres reference to the very first of those Works of Improper Creation, *God who commanded the Light to shine out of Darknes hath shined in our Hearts*, to give *the Light of the Knowledg of the Glory of God*: wherefore as that Light, which first shined out of Eternal Darknes, was so produced not by a Proper, but Improper Creation, as I have shewed, and by such Improper Creation, and not only by a Natural Generation, as the Light of Fire, or Candle, is now Generated; so is Regeneration the Immediate Work of the Divine Spirit, not by Proper, but Improper Creation, and by such a Creation, and not by Natural Generation; as our Savior saith, *That which is born of the Flesh is Flesh, and that which is born of the Spirit is Spirit*. And this work of the Divine Spirit in the Hearts of Men Regenerate is the Divine Life of the Soul: thus being indued with this Divine Grace, and so exalted far above, not only the Sensitive, but also the Naturaly Intellective, and the whole Animal Life therof; and so is termed, *the Life of God*: and this Regeneration of the Soul a Translation from Death to Life, which is indeed a most Miraculous Work, and though not any Proper Creation of any Substance or Faculty from Absolute Nonentity, yet is an Improper Creation of the most excellent of all Created Qualitys, as I have shewed. And in this respect it is somwhat more, that it requires a Conjunct Irradiation of the Divine Spirit continualy (as the Diaphanous Air doth of the Light and Heat of the Sun) which is wholy Supernatural. And in a Spiritual Life, or the Union and Communion of the Soul with God, even the wisest of Philosophers have rightly placed the true Happines of Man; though they were ignorant of such Supernatural

Irradiation by the Divine Spirit, and of *Jesus Christ* the Redeemer, through whom only it is to be obteined. Who is indeed *The Brightnes of his Fathers Glory; and expres's Image of his Person*, Infinitely, and Incomprehensibly, as he is the Essential, Natural, and most Univocal, and Unigenous Son of the Father, or the very Intrinsecal *Verbum Mentis Divinæ*, who also hath Invested himself with the Human Nature, as the *Epitome* of the Univers, and which was therefore made such in order to him, as I have shewed; and so the Apostle stileth him both together, *The Image of the Invisible God, and Firstborn of every Creature.* And as I said, this very Consultation of the Trinity about the Creation of Man was in order unto Christ; as there was afterward another Consultation of God about the Creation of Woman in order unto Man: And it is also said, *Let us make Man in our Image, after our Likenes*; as it is said of *Adam*, that he begatt a Son *In his Likenes, after his Image*: both which Expressions are not Supervacaneously Impertinent; but as there is a mutual Resemblance between any two Similar things, so it is heer Doubly expres't, and sometimes only Singly, and Indifferently, by Image, or Likenes. Now as there are Combinations between all Created Natures, even Angels and Matter, as I have shewed; so the Image of Holines is the Combination, or Communion between the most Spiritual Nature, that is, the Intellective, and God the Creator. But the most Admirable and Incomprehensible Combination is the Personal Union of *Jesus Christ* God Man both Creator and Creature in one Person. Also *Adam* only was first Created Sole, before *Eve*, or any other, as he alone was generaly, like any other Man, a Microcosm, and as he was specialy and Personaly the Prototype of *Christ*, who was to be a Man himself, though he was the Seed of the Woman: and though Woman also, as well as Man, being partaker of the same Human Nature, was generaly made in the Image of God, and so it is commonly Interpreted, God Created *Adam*, or *Man* according to his Kind, *In his own Image*, yet it is afterward repeated again more specialy and Personaly concerning *Adam*, *In the Image of God Created he him*, and then, *Male and Female Created he them:* and thus *Christ* is called, both the Second Man generaly, and the Second *Adam* Personaly, and so the Apostle also expresly distinguisheth, saying of Man, that *He is the Image and Glory of God, but the Woman is the Glory of the Man: and Christ the Head over all things to his Church*; even as the Man is of the Woman.

man. And thus all that was in the First Creation of *Adam* did prelude to *Christ*, as I have said; who is the only true, Uncreated, and Created Image of God both in his Essence, and in his Operations.

VI. That there is a God, and that the Soul of Man is Immortal, are two Fundamental Points of Religion, as I have shewed; and as in my first Discours I proved the first, so I shall now in this last prove the other; and between these two comprehend all the rest, the knowledge wherof is only in order to these great Ends of Man, that is, the Glory of God, and his own Eternal Beatitude. But though I have Mathematicaly proved a Begining and Creation of the World, and consequently a Creator; becaus the Univers, which conteins all in one, doth afford a Mathematical *Medium*, whereby I might so prove it (as I could also prove it Physicaly or Moraly) and I rather chose that way of Probation, becaus the Divine Wisedom, which lays Natural Philosophy as a Foundation of Divinity, doth thus offer the Begining as an Evidence of both; and becaus some men, who pretend most to Evidence, require such Mathematical Demonstration, which yet may not be exacted, nor expected in the Probation of any thing that is not Mathematical, as the Soul is not; and which, though it be Immortal, yet is not indeed such in Present Actuality, but only in Perpetual Futurity. And as I have proved other Physical *Theses* Physicaly, so I shall now prove this, which concerns a Moral Creature, Moraly, according to the Nature of the Subject Matter; when I have first explained, what I intend by this Term, Immortality; the very Explication wherof, as of any other Terms, whereby Truth is presented in her own Naked Simplicity, doth, by the Aspect and Eradiation therof, carry with it a very great Evidence of the Thing. Now according to all my former Discourses, it is not, nor can it be any Question, whether all Spirits whatsoever, Elementary, Vegetative, or Sensitive, as well as Matter, be Immortal in their own Simple Essences, Substances, and Specifical Natures; for they, as such, are Ingenerable, and were Properly Created; and therefore cannot be Corrupted, and shall not be Annihilated: but as their *Composita* were first Improperly Created, or Originaly Generated, and so are Successively Generable, they are also Corruptible;

and so undeniably the Intellective Spirit, as it is one Substantial Principle of the Human *Compositum*, is also Incorruptible, or Immortal. Again, as it is no Question whether all Generable *Composita* be not also Corruptible, so it cannot be denied but the Human *Compositum* of Body and Soul, as it is Generated, may also be Corrupted, and so the Sensitive Vegetative and Elementary Spirits therof return into their *Chaos*, which we call the Birth, and Death of Men: and so as the Human Spirit is Created, it may also be Annihilated, and the like: but the true and clear State of the Question is, Whether the Intellective Spirit of Man consydered in itself, and without any Conjunction or Composition with his Sensitive, Vegetative, Elementary Spirits, and Matter of his Body, or any of them, be Immortal, or Mortal? that is, whether it can, and doth, as an Angelical Spirit, continue Separate in its own Personal Individuality and Oeconomy after Death, or the Dissolution of the Human *Compositum?* which plainly is the Immortality of the Soul; or like other Inferior Spirits, when the *Compositum* is dissolved, doth thereby and therwith also ceas to be such as it was before in itself, Individualy and Oeconomicaly; and so having no such Individuality or Oeconomy in itself Separately, and without the *Compositum* but only in and with the whole *Compositum*, is disolved together with it, and the Substance therof return into the Dust, as its own Element, and *Chaos*, wherin it was first Latent and there is Confounded and Coagulated with others? (out of which again, not the same Individual and Oeconomical Spirit, but another in a new *Compositum* may be Generated) which is the Corruption or Mortality therof; and such new production another Generation. Now that the Intellective Soul of Man is not so Mortal or Corruptible, but Immortal and Incorruptible, is the purport of the whole Scripture; becaus, as I said, it is a Fundamental Point of Religion; and whosoever believs Scripture to be the Word of God, may not, nor can he deny it; but he who will deny the one, must first deny the other; that is, that the Scripture is the Word of God. Yet I shall more specialy produce one Text, becaus it doth include with the Divine Authority also some Natural Reason of the Thing. The Wiseman, speaking of the Death of men, saith, *Then shall the Dust return to the Earth, as it was; and the Spirit shall return to God*

God that gave it: wherin he plainly declareth that the Body, and all the Bodily part, (which he termeth, Duſt, as God ſo called it at the firſt, becauſ he made it of the Duſt of the Earth and ſuch generaly as the Body of Man is in the very Inſtant when his Intellective Soul departeth out of it, and that certeinly is a Body of Fleſh, and not only a *Lutea Imago*, as I ſaid) doth aſſoon as the Inſtrumental Life of the Senſitive Soul ceaſeth, fall to the ground, and is more and more by degrees Corrupted and Putrefied, untill it be reſolved again into Duſt, and the Senſitive Spirit is alſo Confounded in the *Chaos* therof and Coagulated with others, (as it is alſo ſaid, *Who knoweth the Spirit of a Man, that goeth Upward, and the Spirit of the Beaſt, that goeth Downward to the Earth?* and indeed we cannot know Spirits as they are in themſelvs, nor Pure Matter as it is in itſelf, otherwiſe then by their Accidents, as I have ſhewed) that is, the Intellective Soul returns to God, who gave it by Immediate Inſpiration, and Proper Creation; and as he gave it, ſo he receivs it; for as it was not produced out of the Earth, like the Senſitive and Vegetative Spirits, ſo neither doth it return thither again; that is, as it was not Generated, ſo neither is it Corrupted: and the very ſame Probation, whereby I have proved it Ingenerable, doth alſo prove it Incorruptible: as Angels, who are Ingenerable, are alſo Incorruptible, becauſ they have no Subſtantial Compoſition, and therefore nothing to be Diſſolved or Corrupted; but every one is a Complete *Individuum*, and Perſon in himſelf; and ſo though the Human *Compoſitum*, which was compoſited of Body and Soul, may be Diſſolved, as I have ſaid, yet the Human Soul, which is alſo an Intelligence and Life in itſelf, was Immediately Created ſuch by God, and therefore cannot be Diſſolved; and was not produced out of the Earth, and therefore may not return unto it, but to God that gave it. Thus as every *Compoſitum* is as it were an Aggregate Corporation, ſo made according to Natural Polity, as an Houſ is by Art; and when the Members or Parts of the Corporation, or Houſ, decay or are diſſipated, the very Corporation, or Houſ, ceaſeth to be ſuch, and the Members or Parts therof are Confounded or ſcattered among others; and as an Angel is as a Sole Corporation, which cannot be ſo Diſſolved; ſo Man is both an Aggregate Corporation, like others, in a Common Capacity with

with them, in his Conjunct State, and also a Sole Corporation, like an Angel, in his own Private Capacity by himself, and in his Separate State: and as the others could not be Individuated, or made such Natural Corporations, or *Composita*, without an Improper Creation, which was their Original Generation; so neither can these Sole Corporations of Angels or Men, which were made such in themselvs Immediately by God, be Dissolved without a Divine and Supernatural Power, which only can Annihilate them. But, as I said, I shall rather prove the Immortality of our Souls Moraly, by that Argument of *Plato*, which is very Rational and Philosophical, and may be farther improved by Christianity. Certeinly God the Creator and First Cauf of all things is also the utmoft End therof; and he is Immediately served only by Angels and Men, becauf they are Immediately Subordinate to him, and the only Intelligences in Nature, which only have any Conscience or Conufance of him; and therefore can only perform that Immediate and Spiritual Service, which he requireth, and which is fitt and Proper for him who is a Spirit, and will be so worshiped: and so, as I said, they were Created and appointed to gather in all the Revenues of his Glory, and to render it to himself, as well as to Glorify him by their other Personal Services: Wherefore if these Intelligences should perish or ceaf to be in their Personal Individualitys, though their Subftantial Principles might not ceaf to be, but be Confounded or Coagulated as others, yet becauf they should not so any longer continue to be the same Persons (as no *Compositum*, when it is once Dissolved, doth Naturaly return again to be the same) but their Personalitys should so be destroied; then it should be all one, in respect to this great and utmoft End of Creation, as if they had never been Created: for as if God had Rested from all his Works after the Fourth Day, and before any Sensitives were produced, and neither they, nor Angels or Men had been Created, all the other Creation had been void and vain in respect to itself, as I have shewed; becauf there had been no Spectators to Perceiv or Enjoy it, so if Sensitives also had been produced, they could only Behold and Enjoy the Creation, but not render any Glory therof unto God the Creator, of whom they are wholy Ignorant; and so all of them had been made in vain, becauf none of them could attein the very End of Creation,

which

which is the Glory of the Creator: and though they had so continued to be for ever, yet the very End of their Being had been Nullified; yea though they were made Perfect and Good in themselvs, yet they had not been Sanctified or Sublimated to any Divine Use or Service, nor could God have so pronounced of them all, that they were Very Good; nor would he have so Rested untill he had so reduced them all to himself, and his own Glory; nor Instituted such a Sabbath of Spiritual Rest, wherin he did Review and Rejoice in all the Works which he had wrought, and from which he received the Emanant Reflections of his own Inherent Glory, according to the utmost Capacity of Finite Nature: Thus also if the Intelligent Natures of Angels, or Men, should be Mortal, then all the Manifestations of his Glory to them, or by them, should with themselvs ceas and Vanish away; and wheras they also do Personaly manifest his Divine Honor, or otherwise Dishonor him, so he, who is the Great King, according to his Roial Greatnes and Goodnes will recompens them with Reward, or Punishment, wherunto Piety and Impiety, Virtue and Vice, do Moraly Relate; and in the Distribution of his Mercy and Justice accordingly his Everlasting Kingdom of Glory doth consist: and therefore also all his Subjects therof must be Immortal; otherwise after they had thus Served or Disserved him, they should Escape him, and lose their Rewards or Punishments, and he the Glory therof: for so the same Man or Angel should ceas to be, and the Name of his Person, as it stands in Gods Book, be Obliterated, and so all those Eternal Monuments of his Mercy and Justice be Defaced. Though it is true, that all Men, and all the Angels in Heaven, or Divels in Hell, can add nothing to, or diminish from Gods Uncreated Glory, which he Eternaly Enjoieth in himself, and which is Immutable as Himself; nor was the World made for any such End, but for the Created Manifestation therof, which accordingly as they do Advance, or Eclips, by serving him, or sining against him, so he also according to his Created or Reveled Law of Justice will most certeinly Retribute unto them. And this Moral and Political Argument is very much inforced by the consyderation of Gods present Providence and Administration, which is as the Political *Chaos* of the World Future, and seemeth to be as Inane and Inform; and yet out of it will he produce all the Beauty and Glory of the other World. Thus *no man knoweth either Love or Hatred by all that is before*

them; All things come alike to all; There is one Event to the Righteous and to the Wicked. But also, *It is appointed for all men once to Dy, and after Death the Judgment*; so that Death shall not Prevent, but Prepare for Judgment; as the Prison is not to Concele, but to Secure the Malefactor. And I am so confident of the Moral Conviction of this Argument (which as I said is a Common Notion, deduced from the Immediate Knowledg of the Nature of our Intellective Soul, and of God our Creator, Preserver, and Governor, collated together) that no mans Conscience can outface it, but only his, who doth not, or will not regard it: and unless such who can deny all Polity of Nature, and the Subordination of all Inferior Natures to Man, can also be so Impious as to deny the Immediate Subordination of Men and Angels to God their Creator, I do not see how they can evade it; which if they can, they do also thereby elude all Religion and Worship of God. Nor are Sensible Experiments wanting, though I will not offer any Direct Testimony therof to such who can deny Divine Authority, and from whom therefore I may not reasonably expect, that they should believ any Human Reports or Records of the Survivorship of the Souls of men after Death: and *If they will not hear Moses and the Prophets, neither will they be perswaded, though one rose from the Dead*: and should tell them this very thing, that he hath rose from the Dead: but I shall therefore rather offer another common Experiment among the Living, from which I shall deduce a Collateral Evidence of this Truth: and that is Self-murder in Man, and in none other Inferior *Animals*, who will not so destroy themselys, Perceptively, and Spontaneously, and being in no *Delirium*, but in sound Health, and Strength of Body, as Man very often doth most Wittingly and Willingly, and with the greatest and most sedate Deliberation. Now as I have before shewed, Self is such a First Principle and Fundamental Interest in Nature, that as Nature generaly, so all particular Natures, do intend and endeavor to the utmost the preservation therof; nor can it by any Natural Power of Compulsion, or Perswasion, be removed from this most Innate Principle and Instinct, (except only for preservation of the Universal Nature, which is also Natural in order to the necessary preservation of its own Particular Nature, as a Fox will bite off his Leg to preserv his Life)

for

for if any thing could be ousted of this most Natural Principle, then it should be ousted of itself: wheras Self is the Foundation of all other Concernments. Thus a Lion, Mastiff, Bear, Boar, Horse, or any other most stout and couragious Brute, will ly whining and pining to the last, rather then destroy itself, or suffer itself to be destroied by others, untill Death necessarily dissolv it; becaus it is Conscious to itself, and hath this Common Notion in itself, that the Individuality therof, which truly and realy is the very Self therof, shall perish for ever: wheras Man, having this Common Notion of the Immortality of his Soul Imprinted in his Soul (which principaly is himself, as Hebraicaly the Human Person is called a Soul, and as it is said *Animus cujusq; est quisq;*) though generaly, according to his whole Human *Compositum*, he affecteth Life and dreadeth Death', yet judging it better for him to be in the Separate State of his Soul, then in the Conjunct State of his *Compositum*, he can and doth accordingly both determin and execute his own Death and Dissolution: though I do not conceiv that every Self-murderer (like *Cato*, who beforehand read over *Plato*'s Discourse of the Immortality of the Soul) doth so consyder it Explicitely; nor as *Spira*, who in Despair would dy, that he might know the worst after Death; but rather most of them, not regarding any better or worse State after Death, however are willing to dy, to eas themselvs of their present Miserable Life, and so desperately venture upon a future, whatsoever it may be: or perhaps, according to the vast and most Licentious Liberty of Human Understanding and Will, may thus Explicitely not only deny, but act contrarily to any Common Notions or Instincts whatsoever, and so destroy themselvs: which yet they could never effect without such an Implicit Notion of the Immortality of the Soul Radicated in itself. And so none but an Immortal Being can wish a Notbeing, which yet is only an Imaginary and Illusory Wish; as we commonly Imagin Vacuity to be Somthing, we know not what; and so we may wish Notbeing, as Somthing which we conceiv to be a Vacation from Ill-being, we know not how: for certeinly we can Naturaly desire nothing but only in order to Self, which must always presuppose Self, by which, and for which, we so desire it: But however we may conceiv heerof in respect to present Ill-being, certeinly none can affirm, that any Brute hath any fore-knowledg or expe-

expectation of any better Being heerafter, or of any Transmigration, or Translation, or that it can thereby be perswaded out of its present Being, whatsoever it is, nor can he deny that there is such a foreknowledg and expectation in Man, or that he may Naturaly and Realy desire, and very truly say, *Cupio dissolvi*; as I believ not only many Christians, but also some Philosophers have thus welcomed Death; not through any Necessity, or in a higher Strain of Gallantry; but with a clear and conscious expectation of another Life after Death, and breathing after it, in and with the willing expiration of their present Life; which, whether it be also joined with any assurance of a better State therin, or not, yet plainly proveth that the Soul of Man generaly is Immortal, becaus it can so affect another Separate State, which no Brute can so affect, becaus it is Mortal; and that it shall be either in a worse State of Eternal Misery, becaus some Men can so Imaginarily wish to prevent it; or in a better State of Eternal Happines, becaus others can so Realy wish to enjoy it. And though I believ this Opinion of the Immortality of the Soul (as also the other, that there is a God) to be Explicitely Exerted and Exercised by few, yet certeinly they are both Implicitely Radicated in the Minds of all men, which Renders their Lives and Conversations such, as if sometimes, and in some respects, they did seem so to believ, and at other times, and in other respects as if they did not; and it may appear so to be in themselvs, and to themselvs, in that they have such a continual strife and endeavor to cast and keep these Opinions out of their Minds, which is commonly done either by not regarding, or resolving against them, wherof the very fear or doubtfull apprehension, which no Brute can have, doth approve to the Soul itself what it may expect; and which, if men begin at any time to think therof, will return upon them; though some more learned, study to confute themselvs by Contrary Opinions, and that they may make way for the denial of the Immortality of the Soul, therefore also deny all Separate Spirits both of Men, and Angels Good, and Bad; as the *Sadducees*, and others, with *Epicurus*, deny all Inferior Spirits whatsoever; hudling all things and themselvs together in the common Matter; which is such a Physical Libertinism, as though it may gratifie us at present, yet is indeed no less then the Eternal Self-murder of the Soul. And so likewise others, though they will not reduce all Spiritual Substances to the grose Matter, yet affirm their Soul to be only *Pars Animæ Mundi*, as they term it; into which, when it dieth,

dieth, it returns again, as into another Spiritual *Chaos*: and so though the Substance remain therin, Consounded and Coagulated with others, yet the Personality and Individuality therof is thereby Corrupted and destroyed, like the Sensitive Spirits of Brutes; which is only another more subtle Denial of the Immortality therof, that is, of the very Individuality and Personality of every Human Spirit, as I have shewed. Wherefore becaus they cannot deny the Immortality of the Soul Absolutely, they thus deny the same Personal future Condition therof, and any such Intensive, or Extensive Rewards, or Punishments, in Heaven, or Hell; which to mitigate and moderate, they have invented and appointed a Transmigration for all Souls into better or worst Bodys after Death, accordingly as they have behaved themselves while they Lived in the former: Whereas they must also affirm, that they are still Human Spirits, which are so detruded into Brutes, or Vegetative Bodys; as the Poets plainly do acknowledg, and so the Man in the Buck would have said to his Hounds and Huntsmen, *Actæon ego Sum* ——as the Tree did to *Æneas*, *Nam Polydorus ego*——which yet certeinly is contrary to all Philosophy and Nature: for every Specifical Spirit must have its own proper Organical Body; and if any of the more Noble and Necessary Parts of its own Body, while it Lives in it, be Discontinued, Dissocated, or Disordered, it will Live no longer in it; much less could the Human Spirit of *Actæon* Live in a Buck, or of *Polydorus* in a Tree; for Bodys are nor only Vehicles of the Spirits, but Domicils, and Officines, as I have shewed; and as Sensitive Spirits cannot Live in any other besides their own Element, so much less can they, or the Intellective Spirit of Man, live in any other then their own proper Bodys, which are therefore so Effigiated and Formed for them by their proper Vegetative Spirits, as I have also shewed. Or if they could be Transpeciated into other Sensitive or Vegetative Spirits, then their Substances being so Specificaly changed, their Faculties, and Qualities, and all their *Ideæ*, and Notions subsisting therin, must also be changed, and al ered; whereby they should no longer remember, who they were, nor what they did formerly; and so they should suffer for they know not what, after such an Act of Oblivion, not only of him that so forgiveth and forgetteth the Crime, but also in him who forgetteth the Fact. And though others say, we be all born with some *Reminiscentiæ*, as they term them, yet certeinly they are no such Acquired Notions of any Matter of Fact, or thing Good or Evil, that we formerly did or

learned, but only such Common Innate Notions which God and Nature have Imprinted in us, and so taught us to know them, which are only Natural, and not Sinful: and there are also certein Special Innate Notions of Specifical Spirits, which are only proper to that *Species*, and to none others, as I have shewed; all which should be lost by such Transmigration, or Transpeciation; which therefore is not, nor can there be, any such *Metempsychosis*, as Philosophers would have it; nor yet any such *Metamorphosis*, as the Poets more rightly term it: and as both of them are contrary to all Reason or Sens, so we have no other Authority but only *Ipse dixit* for such Assertions. And yet this Opinion being apprehended as a Midle way between the Mortality and Immortality of the Soul (though not according to the Excellent and Spiritual Nature of an Intelligence) and also between no Reward or Punishment heerafter, and the true Heaven and Hell, and all the Glorious Transactions therof (though not worthy the Majesty and Perfection of the Divine Creator) hath very much prevailed antiently among the more Learned Heathen, and generaly with the Common People; and is still reteined by the *Banians*, and some others. But the most difficult Point that I know among Christians, concerning the Immortality of the Soul, is that, which is called by some, the Sleep therof, and by others more rightly *Psychopannychia*, or the Pernoctation of the Soul, between Death and the Resurrection; for in Sleep there is some Operation both of the Sensitive and Intellective Spirit of Man, though Wild and Irregular, as I have shewed; and it is not intended that in this State there is any Operation whatsoever, but a total Vacation, and Cessation therof, like Rest of the Body, or Bestial part of Man, which is said to Sleep in the Grave, and that is therefore called a *Cœmeterium*, or Dormitory. But certeinly the Soul, when it departeth from the Body, carrieth along with it all its own Innate and acquired Notions (though as the Man himself, so all his Thoughts perish as to this world) and I doubt not but that also it hath others, and farr higher, and better in that State; and Blessed Souls are said to be in *Paradise*, which imports Pleasure and Delight, and that cannot be without Contemplation and Enjoiment; also they are now stiled *Spirits of Just Men made Perfect*, which cannot be without Perfect Operation; and since they are Separate from the Body, and all Instrumentality therof, we must consyder how and in what maner they may probably

bably Operate. And heer I muſt explicare what I intend by terming the Intellective Spirit of Man an Intelligence, and affirming that and Angels to be in the ſame Intellective *Claſſis*, whereby I conceiv, that as Fiſhes, Fowls, and Beaſts, are all in the ſame Senſitive *Claſſis*, and yet very farr Different one from another, not only in their whole *Compoſita*, but alſo in their very Senſitive Spirits, which Specificaly Differ; and the Piſcine Spirits are much Inferior to the Beſtial; ſo alſo are Angelical and Human Spirits in the ſame Intellective *Claſſis*, (and not only Spirits Genericaly as they are diſtinguiſhed from Matter, and as all Elementary, Vegetative, and Senſitive, are Spirits as well as Angels, as I have ſhewed) but Claſſicaly Coordinate one with another: and though the Spirits of Men be Inferior to Angelical, as it is ſaid, *Thou haſt made him little lower then the Angels*, yet certeinly they are not Subordinate unto them, as Fiſhes, though Inferior to Beaſts, are not Subordinate unto them (ſo as all the Senſitive *Claſſis* is unto Man, and the Vegetative to the Senſitive, and the Elementary to the Vegetative, and Matter to the Elementary;) becauſ they are not of an Inferior *Claſſis*, but of the ſame *Claſſis*, wherin all are Coordidinate, as I have ſhewed: and ſo are the Intellective Spirits of Men with Angels; and as our Savior ſaith, in this Future State they ſhall be *Iſangeli*, not only like, but equal to them; and indeed if we ſhould not be in the ſame Intellective *Claſſis* with them, Man ſhould not be a Microcoſm as he is, and *Chriſt* in our Human Nature ſhould not have Aſſumed all the ſeveral *Claſſes* of Nature, as he did: And becauſ we are ſo Coordinate with them, therefore we need not their Mediation and Interceſſion, but only his, who is the Mediator God-Man: And as the higheſt Excellence of their Nature is to Know, Love, and Enjoy God, ſo we are capable heerof as well as they: and as we and they are Moral Creatures, ſo we are Mutualy obliged one to another, but neither of us to Brutes; and ſo the Angel ſaid to *John*, *I am thy fellow-ſervant*, and we are yet more united in *Chriſt*, who ſhall alſo make us partakers of their Superæther, and in whom all things are Recapitulated, as the Apoſtle ſaith, *both which are in Heaven, and which are in Earth, even in him:* Whereby, as it is alſo ſaid, we *Come unto Mount Sion, and unto the City of the Living God, the Heavenly Jeruſalem; and to an Innumerable company of Angels; to the General Aſſembly, and Church of the Firſt-born, which are written in Heaven.*

Heaven. Now wheras I have ſhewed, that in this preſent Conjunct State we cannot Operate without or beyond the Body; that is, we cannot Underſtand without Phantaſms, which we Irradiate with the Spiritual Light of our Underſtanding, nor Localy Move the Body without the Motive Spirits, which we Move by the Spiritual Power of our Will, whereby we Command and Govern the Senſitive Imagination and Appetite Immediately, and ſo the whole Body Mediately; and that Angels need no ſuch Inſtrumentalitys, but may Intuitively Contemplate all things by the Irradiation of their own Mental Light, and Move them by the Eradiation of their own Spiritual Heat, as I may ſo term them; thus our Human Spirit, as well as they, ſhall alſo then have the ſame Intuitive and Motive Qualitys Actuated therin, which are now in it Potentialy; for ſo Intelligences, as well as all other Natures, have their proper Potentialitys and Actualitys, otherwiſe they ſhould not be Mutable, (for Alteration is by production of Potentiality into Actuality, and reduction of Actuality into Potentiality, as I have ſaid) and though they are not Generable or Corruptible in their Subſtances, which are Simple, and without any Miſtion, or Compoſition; and ſuch as always Subſiſt in themſelvs, and are neither Generable, nor Corruptible, as I have alſo ſhewed; yet they have their Accidental Qualitys, by which they Operate, and not by their Eſſences or Subſtances Immediately, more then other Natures; and all ſuch Accidents do Subſiſt in their Subſtances, and thereby, and therin, have their Actualitys and Potentialitys, and are therefore Generable and Corruptible in themſelvs, and ſo Mutable. Alſo all Simple Subſtances of the ſame *Species* have all the ſame Specifical Qualitys therof, either Actualy, or Potentialy; becauſ they are of the ſame *Species*, as they are ſuch Simple Subſtances, though their *Miſta*, or *Compoſita*, may otherwiſe Differ Specificaly as ſuch; for ſo though the Cortical Stones, Metalls, Minerals, and Subcortical Magnet differ Specifically, as *Miſta*, yet as all of them are of the ſame Predominant Element, Earth, ſo that being a Simple Subſtance in it ſelf, hath all the Terrene Qualitys in it ſelf, Actualy, or Potentialy; and thus the Magnetical Virtue, which is a Terrene Quality, is Actuated in Iron; and ſo, as is ſaid, may be in Brick-earth, and the like: And ſo though Æthereal and Culinary Fire may differ Specificaly, as *Miſta*, yet the Elementary Fire which is

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Predominant in both is Specificaly one and the ſame Simple Subſtance, and hath all the Æthereal Qualitys in it ſelf, either Actualy, or Potentialy, and ſo Planetary Virtue might be Actuated in Culinary Fire, as well as in Comets; and ſo alſo all Simple Subſtances of the ſame *Claſſis* have the ſame Claſſical or Generical Qualitys, as every Graſs, Herb, and Tree, hath Vegetation, and the like, though in their own ſeveral Specifical maners; and every Fiſh, Fowl, Beaſt, hath Senſation, and the like, though in their own ſeveral Specifical maners: And thus the Human Spirit, and the Angelical Spirit, being both Intelligences, which may Live and Operate ſeparately, have alſo ſuch Generical Qualitys, both Intuitive, and Motive, whereby they may ſo Live, and Operate Separately, in themſelvs, though in their own ſeveral Specifical maner, either Actualy, as the Angels, or Potentialy, as we alſo now have them: And as an Embryon in the Womb hath many Faculty-Potentialy, which yet are not Actuated untill it be born and brought forth into the Light, ſo have alſo our Souls, while they are as Embryons in the Egg, as it were, of our Bodys; and as we have now many Actual Qualitys which ſhall in that Separate State be reduced to Eternal Potentiality, as Nutrition, Taſting, and the like; ſo ſhall we then have others Actuated in us, which we never had Actualy before. And certeinly, in the Palingeneſy of the Body, there ſhall be ſuch a great and wonderfull change of Qualitys, that the Apoſtle calleth it a *Spiritual Body*, as I have ſhewed; which ſhall not be only a Platonical Vehicle of the Soul, but Organical, and moſt Glorious; as the Apoſtle ſaith, *The Lord Jeſus Chriſt ſhall change our Vile Body, that it may be faſhioned like unto his Glorious Body; according to the working whereby he is able even to ſubdue all things to himſelf*: Whereby alſo we may underſtand that Separate Spirits are not ſo vaſtly Diffuſive or Atomicaly Retractive as ſome fanſy, but have their Bounds, as other Finite Natures; for ſo certeinly our Separate Soul, after the Reſurrection, ſhall be confined within the Body, as well as in this Conjunct State. And that the Separate State of the Soul is ſuch, may ſomewhat Senſibly appear in our ſelvs, who ſeem to have ſome Common Notion therof Imprinted in our very Souls; which made the Heathen Philoſophers ſo much complain of the Priſon of their Body, and Bondage of this Conjunct State, as expecting a better afterward. And Chriſtian Divines have a Problem, Whether if

Adam had ſtood, he ſhould not have been at length Tranſlated to a better, that is, this other State? and if we ſeriouſly conſyder it, there muſt probably have been ſome ſuch ground of that wonderfull, and otherwiſe inconceivable Tentation of *Adam* in Paradiſe; which was not to any thing he then had, nor to any thing which he was not capable to have, eſpecialy if it were Abſolutely Impoſſible, as to be a God, or ſo to be like to God; for though now the Corrupt Mind of Man may, as I have ſaid, apprehend, or affect Nonentity, as Entitative and Impoſſibility as Poſſible; yet we may not ſuppoſe any ſuch thing of him in that State of Perfect Underſtanding and Will; but it was a moſt obvious and prevalent Tentation, that he having this Common Notion (which we have now only Implicitely and Confuſedly) in his Perfect Mind moſt Explicitely and Diſtinctly, and thereby knowing that he had ſuch Angelical Facultys Potentialy in himſelf, might covet to have them Actuated, that ſo he might be *like the Gods knowing Good and Evil.* And though this be a farther and higher Perfection of the Human Spirit, yet *Adam* was not therefore made Imperfect, but Good and Perfect according to that Conjunct State, wherin he was Created; which was his Original Perfection, and whereby he was ſo made a moſt Perfect Microcoſm, or *Epitome* of the preſent World; as he ſhall be alſo in his future State of the other World; when not only theſe Angelical Perfections ſhall be Actuated in his Soul, but his very Body ſhall be more Spiritualiſed, as the Apoſtle termeth it, or made fit for that more Spiritual State of an Immortal Life: which yet ſhall ſtill be a Body, having all Corporeal Propertys and Affections; ſuch as the Body of our Savior was after his Reſurrection; which though not Senſible, as before, to preſent Senſ; for ſo he was not Viſible, or Tangible, otherwiſe then as he ſo pleaſed to appear ſometimes unto ſome; yet heerafter, when our Senſitive Bodys ſhall be alſo refined and ſublimated, and made like unto his Glorious Body, *every Ey ſhall ſee him*; as *Job* ſaith, *I ſhall ſee for my ſelf, and my Eys ſhall behold him*, that is, *Jeſus Chriſt* his Redeemer, who ſhall Eternaly be the Viſible Deity, and *Image of the Inviſible God.* Nor could *Chriſts* Spiritual Body penetrate any other Body, as ſome have ſuppoſed from that Text, wherin it is ſaid, that he entred *when the Doors were ſhutt* (or the Doors being ſhutt) which yet it doth neither expreſs nor import, but only that he

did

did not enter into the houſ, ſo as our groſs Bodys now do, by Doors open, which is their uſual *Avenue*; wheras his more Spiritual Body might enter in by a Window, or other Aperture of the houſ, without any Penetration. And this Renovation both of Soul and Body ſhall be generaly Conformable unto his, and ſo made by his Divine Power, as it is ſaid, *The firſt Man* Adam *was made a Living Soul, the laſt* Adam *is made a Quickning Spirit: And as we have born the Image of the Earthly, we ſhall alſo bear the Image of the Heavenly.*

VII. *Thus the Heavens and Earth were finiſhed, and all the Hoſt of them*; which Conſummation plainly refers to the firſt Inception, *In the Begining God Created the Heaven and the Earth*, or, as it is Originaly, theſe Heavens and this Earth, which were the ſame that were afterward ſo finiſhed in the ſeveral Works of the Six Days; and which, as it is alſo ſaid, *God Created to make*; and particularly it is ſo expreſſed, not only of Elements, but alſo of Vegetatives. *Theſe are the Generations of the Heavens and the Earth, in the day that the Lord made the Earth and the Heavens, and every Herb of the Field, before it grew*, as I have formerly obſerved; and now obſerv again, how this Doctrine of Creation of all Generable and Corruptible things firſt in the *Chaos* of their Potentialitys, and of their ſeveral Generations afterward in the Six Days, is ſo plainly and cumulatively expreſſed and repeated, that none may doubt of the Truth therof. Again as not only Heavens and Earth heer are mentioned, but alſo an Hoſt therof or orderly *Militia* (and thus God is called the Lord of Hoſts or of the Armys of all the Creatures) ſo, as I have obſerved, there is both a Scale of Nature, and alſo an Oeconomy of the *Compoſita*, and Polity of the whole Univerſ, and that therefore it is declared of them all, that they were *Valde bona*, (or as it is Originaly *Valde bonum*, Singularly, as of One) and an *Epitome* heerof is every Man in himſelf, as I have ſhewed; and becauſ, as I have ſaid, he is ſuch a Microcoſm, now in reſpect of this World, and ſo ſhall be of the World future, therefore God doth ſtill continue to Create the Souls of men, from the end of the firſt Created World, (which was thus conſummated in Man, as the Summ of all the reſt) untill the begining of the other World. And if we rightly eſtimate the many Millions of men living together

gether on the Earth, probably he doth Create Human Souls every Minute, and ſo though he reſted from making the great World, yet he maketh many ſuch litle Worlds continualy: for though it is ſaid, *He had reſted from all his Works which God had Created to make*, that is, to be Generated or to make by Generation, firſt Originaly, which was Supernatural, and their Improper Creation, and ſince Succeſſively, by Natural Generation, as I have ſhewed; yet he reſted not from Proper Creation of Human Spirits in their ſeveral Individualitys, according to the ſame Specifike kind, which he had Originaly Inſtituted and expreſſed in the Protoplaſt, or firſt Man, and ſo to be Compoſited with Human Bodys, according to that very Inſtitution and firſt Law of Human Generation, as I have alſo ſhewed. Nor doth he ſo Immediately Generate or Improperly Create the Human *Compoſitum* of any other Man, as he did the firſt *Adam*, except only *Jeſus Chriſt*; who was thereby declared to be the *Theanthropus*, as it is ſaid, *The Lord himſelf will give you a Signe, Behold a Virgin ſhall conceiv and bear a Son, and call his Name* Immanuel, *which being interpreted is, God with us.* And when God had thus Originaly made Man (that is both man and woman, as it is ſaid, *Male and Female Created he them*) and probably woman of whom *Chriſt* was to be born, and ſo is called the *Seed of the woman* being made after man, was alſo the laſt of all theſe Works of God) then he pronounced of them all Univerſaly, that they were very Good, not only in reſpect of the Univerſ, but alſo of Man, as the *Compendium* of all, and Conſummation of his whole Work of Creation, in order to his enſuing Work of Redemption. Wherupon he Inſtituted and made for Man his firſt Sabbath of Reſt; *And on the Seaventh Day God ended his Work which he had made*, that is, as he began in the very firſt Inſtant, ſo he continued to work untill and in the very laſt Inſtant of the Six Days; and therefore; he reſted not before, but proceeding continualy to work in all the Six Days (as it is ſaid at firſt, that *the Spirit of God Moved on the face of the Deep*) he ended, or Hebraicaly, had ended, on the very firſt Inſtant of the Seaventh Day, or Sabbath of Reſt; wheras it could not be rightly ſaid, that he ended, or had ended, before; for in the very laſt Inſtant of the Six Days he ſtill continued to work: ſo exact and proper is Divine Language; and though men cannot diſcern between Inſtants of Time, or Points of Extenſion

tenſion (which therefore are ſo Indiſcernible, that the Fluxes and Augments of Created Nature may appear Intire and Continuous to us) yet *known unto God are all his Works*, even Inſtants and Points as well as Numbers; and accordingly he doth declare them in his Word, as exactly and properly as Human Underſtanding can apprehend. Again though it be ſaid, that *He reſted on the Seaventh Day from all his Work which he had made*; yet it is not ſaid, that he reſted in it, but this Work of Creation was Corrupted very ſoon after it was finiſhed: Wherefore as there remaineth a Reſt to the People of God by the Redemption of the World through *Jeſus Chriſt*, ſo that is called alſo the Reſt of God himſelf, and ſhall be the Everlaſting Sabbath, and Conſummation of all his Works, both of Creation, and Redemption, wherin he will reſt for ever.

Thus I have delineated the true Syſtem of the World, which God himſelf, who made it, hath declared and reveled unto us in this Divine Hiſtory of the Creation of the Heavens and the Earth; that is, the Superæther, and utmoſt Circumference therof; and within that Concave Sphere, the Æther, and within that, the Air, and within them all, the Orb of the Terraqueous Globe, and inmoſt Center therof: which certeinly is the moſt Symmetrical and Uniform Chorography of the whole Body of Matter, and of theſe ſeveral Members therof; moſt exactly according to the greater or Leſs Denſity of their Matter, and more or leſs Activity of their Spirits. And therin I have alſo deſcribed the Scale of Nature, and all the *Claſſes* therof Subordinate and Subſervient one unto another; that is, Matter to Elementary Spirits, and Elements to Vegetatives, and Vegetatives to Senſitives, and Senſitives to Intellective Man, and Man to *Jeſus Chriſt*, the Head of all things: *and other foundation can no man lay then that which is laid* by God himſelf. *Monendus eſt miſellus Philoſophus ut deſinat eſſe Conditor Mundi:* and I confidently ſuppoſe, that if *Plato* and *Ariſtotle* had enjoied the benefit of this Divine Light, they had farr more improved Philoſophy by building upon this Foundation, then Chriſtian Philoſophers have done by building upon theirs: and that we may enjoy the benefit of their great Learning, and yet diſengage our ſelves wholy from their Errors, we muſt reduce all their Opinions, and Human Inventions to this moſt Infallible Rule; which, if we rightly conſider it, will not only rectifie their Errors, but alſo inſtead therof preſent ſuch Divine Truths, as they did never conceiv or apprehend:

hend: as may particularly appear by a short Recapitulation of what we have formerly discoursed. Thus first we have proved a Begining, and consequently a Creation of the World; which no Heathen Philosophy so understood, as it is declared by God in his Word; but either imagined an Eternal Creation without a Begining in any certein Time, removing it perpetualy backward by supposition of many Deluges, Conflagrations, and general Devastations, and Indefinite Revolutions: or though they may sometimes seem to acknowledg an Improper Creation from some precedent Principles of Matter, Atoms, *Mens*, *Anima Mundi*, *Ideæ*, and the like; yet they do not express any Proper Creation from Absolute Nonentity, to which Heathen Philosophy never did subscribe; nor do I know any Word in any other Human Language, but only Hebraical, which doth import such a Proper Creation. Though if any conceiv otherwise, and can collect any such Acknowledgment from their doubtful, and confused, and sometimes contrary, Sentences, I shall not hinder him from subjoining their Human Testimony to Divine Authority. But certeinly *Moses* doth most plainly and clearly affirm a Creation of the World, in a certein Begining, and so proceeds to declare the first Age of the World as particularly and expresly, as if himself had been Contemporary, and lived in the same Time and Places; and the Affairs therof, (which all Heathen Historiographers esteemed Fabulous, and termed *Ogygia*) more exactly and truly then they do relate the Transactions of later Ages. And thus wheras other Nations dated their Writings so many years *ab Urbe Condita*, or in such an Olympiad, or the like; the Jews, both antient and modern, date them, *ab Orbe condito*. Nor is the whole Age of the World so very large or vast, but that every man may according to Divine Chronology easily comprehend it: And indeed there are not probably above 150 Generations between us and *Adam*, who was the Common Ancestor of all Mankind: for the Scripture doth exactly enumerate them all from the first *Adam* to the Second; that is to *Jesus Christ*, 76 Generations Inclusively, (as *Enoch* is so reckoned from *Adam*, and the Brazen Lavacre so to be measured, as I have shewed) for so *Luke* declares his ℔ *Seculum*, as *Matthew* doth his proper Linage: and if we allow fower Generations to every Century, since the Nativity of our Savior, yet the Total will not exceed that Number. Nor is the whole World and System therof so Indefinite but that

that the Mind of Man may comprehend it, and by the Light of the Divine Word look through it as a transparent Globe: for so it is said, *He hath set the World in their Heart*; and his Word plainly sheweth us how all Generable and Corruptible things were first educed out of a *Chaos* of Potentialitys, wherin all their Primitive and Simple Essences were then latent; and brought forth most orderly and successively in Six Days, by God who Created them before by a Proper Creation from Absolute Nothing, in a Supernatural maner by Improper Creation; which was their Original Generation then Instituted by God himself, and by his Divine Benediction so continuing Successively: And this is a short, plain, and evident account therof; wheras others, instead of such Proper and Improper Creation, have imagined a *Potentia Materiæ*, or Power in the Matter of producing out of itself other Active Substances farr more excellent then itself; which yet were not before Realy in it; or that the Matter is transpeciated and converted into them: though an Angel, who is the chief Being in the Scale of Nature, cannot so produce out of himself any other then his own proper Qualitys and Accidents, nor can he Realy transmute himself, or be converted into any other Inferior Nature whatsoever; and much less can Matter, which is the lowest and basest of all others, convert itself, or be coverted into any Superior Nature. Certeinly that which they so affirm to be *in Potentia*, must be either *Ens*, or *Nonens*, while it is so *in Potentia*; and if it be *Nonens*, then *Non est in Potentia* (as I have shewed of Vacuity) and if it be *Ens*, then as I have said it is also an Entity Created by God in its Potentiality, or *Chaos*, and so produced by Natural Generation into Actuality; as if Vacuity could be any *Ens*, then it must also be Created by God, or Concreated with the World, and should not be before, nor beyond, nor any where out of the Created World, and Body of the Matter therof, as others have vainly supposed of such an Imaginary Space, Nor is their *Forma Misti*, or *Compositi*, any other thing then the Result of the very Mistion and Composition of those Primitive and Simple Entities, according to their own Natural Coordinations and Subordinations in the Scale of Nature, which God hath so erected and ordered, that they have in themselvs all the Natural Principles therof, and an Aptitude and Appetite to be so Mist and Composited in all Successive Generation, according to that Law of Original Generation: and therefore Forms are no such things

things as are formed or ordered by I know not what *Cholchodea* or come I know not whence, *aliunde & extrinsecus*, into the prepared Bodys; but, as I have shewed, there are also other Substances, or Substantial Activitys, besides the Body of Matter, Created by God, in and with the Matter, that do Consubstantiate, Inform, or Inspirit it; and fabricate, and fit it for themselves; and also mingle and compose themselvs in and with it into one *Mistum*, or *Compositum*, according to the Order and Oeconomy of Nature, by their own Internal Principles and Powers, which God hath also Created in them. Which Substantial Activitys, or Active Substances, I therefore call Spirits (as the Scripture also doth so call not only Substantial, put also Accidental Activitys; as the Spirit of Wisedom, Jealousie, Meekness, and the like) and they may well admit it, who say, *Omnia Animarum sunt plena*, and particularly that there is a Vegetative Soul; which yet, as the Scripture doth not so express, I can not admitt; for Soul is more special and proper to Living *Animals*, but Spirit, though Eminently it signifies the chief of Spirits that is the Intellective, and so Soul and Spirit are sometimes distinguished, yet more generaly it signifies any Substantial or Accidental Activity whatsoever, and is so commonly used by Chymists, Physicians, and others, as I also use it in a more Spiritual sens. And though I dispute not about Terms, yet certeinly such a Proper and Improper Creation of the Primitive and Simple Entitys, both of Matter, which is a Passive and Receptive Substance, and of the Accidents and Affections therof, and of all those other Substantial Activitys or Active Substances, which I call Spirits, and of all their Accidents and Affections, Created in the first general *Chaos*, and the Original Generation or Production of them, by Mistions, Compositions, Actuations, and Perfections, in the Six several Days; and accordingly all Successive Generation, by Production out of any particular *Chaos* of the same Entitys or Essences, which are so Generated or Produced, are such Real Veritys, that I am perswaded no Philosopher whatsoever can Realy satisfie himself, or others, concerning the first Principles and *Origines* of all things, and all the Alterations by Generation and Corruption, by any such supposed *Potentia Materiæ*, Eminences, and Equivocal Causations, Transpeciations, and Conversions, or the like; which are only Terms and Notions, and no Realitys in Nature: nor can ever confute or disprove this Divine History of Creation, either in the general

neral Syſtem therof, or in any of the particulars, which *Moſes* proceedeth afterward to declare; And thus wheras the Antients generaly conceived the Æther and Æthereal Bodys to be Superelementary, and Sacred, he ſheweth us plainly, how Æther is one of the Fower Elements, and ſo was firſt prepared in the firſt Day, wherin Light, (which is a principal Quality therof) is ſaid to be ſo produced; for the Subſtantial Spirit of Fire, or Æther, was Created before, whereby it is denominated one of the Heavens, and afterward termed *Expanſum*, as well as the Air: nor doth he affirm it to be ſolid or firm, but ſuch a Fluid *Expanſum* as Air alſo is; and plainly implieth that it was moved with the Light in it about the Inferior Orb, whereby God made Day and Night, before the Earth, or Water, or Air were ſo made or fitted, or that there was any Motion therof, or therin. And the Air, which is Naturaly an *Expanſum*, cannot be Naturaly a *Compreſſum*, whereby in its own Element, or Atmoſphere, it ſhould Naturaly ſeek to expand itſelf more, and thereby Elaſticaly preſs, as ſome would have it: Alſo both Æther and Air are called Heavens, as one is the Fountain and Immediate *Medium* of Æthereal Light, and the other the Vehicle, and Immediate *Medium* of Sight; and ſo I ſuppoſe, that Air doth Refract, or Reflect, very little, nor are either Objects in the Air, nor Starrs in the Æther, thereby ſeen Interſected and Inverted, as through a Convex *Lens* in the Air, nor ſo much magnified and diſtended, as Divers ſee Objects in the *Pundus* of Water. Again in this Second Days Work, *Moſes* declareth Vapors in the Air to be only Waters above; and thereby intimateth the Special Inſtrumentality therof in Nature; for ſo indeed Vapor is almoſt as Chymical an Inſtrument, as Fire. Nor yet doth he affirm theſe Waters to be above all the three Heavens, or any of them, as ſome ſuppoſe; but only in, or upon, or all over, that Heaven wherof he treateth in this Second Days Work; or more Criticaly, as it is Originaly, from above; and certeinly we cannot ſuppoſe any Water to deſcend from above, but only that which firſt aſcended from beneath. Nor is this aſcent of Vapors the neceſſary and only cauſ of Winds, wherof we have no mention in the Creation; and if any Wind then were, it was probably ſome very tender and gentle breath, but greater Winds and Storms, which are effects of the Curſ, are alſo cauſed by groſſer Vapors; which whether moiſt, or dry, are not Formaly the very Wind; for

that, as such, is only *Aer motus*; but may be the Efficient Causes therof, as any other Impulse, or Ventilation, of Blasts or Ventiducts: and generaly moist Vapors Cause more Rain, and dry more Wind, as appears by *Herricans* in more hot Countrys. And in the Third Days Works, he shews, how wonderfully God formed and prepared the *Oecumene*, or Habitable Globe, by causing the Waters to Subside, in all the Chanells of Seas and Rivers, which he cut out for them; and by raising the mighty Mountains, which may be therefore rightly termed, the Mountains of God, and by *Jacob* are called the Everlasting Hills, wherof others give us no account. Nor doth he affirm Vegetatives to Live; but, as I have observed, plainly distinguisheth between Vegetative and Sensitive Spirits, which he afterward calleth Living Souls. And in the description of the Works of the Fourth Day, we find none of those Monsters and Figments, which both Poetry and Philosophy have introduced in the Starry Heaven: for neither doth he divide it into Spheres, having plainly shewed before how the whole Æther was only one Sphere, as well as the other Heavens; nor indeed can such several Imaginary Spheres solv the *Phænomena* of the Motions of Æthereal Comets, and of all the Planetary Motions; as of the *Satellites*, which, as I have observed, move not in perfect Circles in the Æther, but only about their principal Planet, whereby their Motion in the Æther describes an Hemitrochoid, as I said; as if a Quernstone were set upright, like a Cartwheel, on a declive Hill, and a man with his hand on the Handle should thereby move it round about the *Axis* down the Hill. Nor doth he assigne any Intelligences, or *Dæmons*, and a *Metratton*, or President over them all, to move the several Spheres. Certeinly the Scripture calleth evil *Dæmons*, Princes of the Air, and not of the Æther, though they were Originaly of the same Nature, and Office with good Angels; but as they were since ejected out of the Superæther, so now probably they are confined within the Subæthereal Orb, between which there is such a great Chasm. Nor doth he distinguish the Luminarys into Planetary and Fixed, but calleth them by one common Appellation, Lights, Originaly derived both in Name and Nature from the Primigenious Light, wherof they were all composed. And he particularly nameth only the two principal Luminarys, which so give Light upon the Earth, and according to which, besides the common and Diurnal Motion of the Æther, all the Sacred

Feasts

Feasts of the Jews were instituted. And as the Sun is first named, so probably he was first made of that Primigenious Light, whereby he Illustrateth all the rest: and therefore is sometimes called by the same Name, or the Light. And as he hath Light, so also Heat, which is another Æthereal Quality, in himself Formaly, and not only Eminently or Equivocaly, as some would suppose; and as indeed I conceiv that the Moon causeth Moisture, which is no Æthereal Quality, over which she doth yet manifestly Predominate; as may appear most notably in Tides, whether she then causeth more gross Vapors, when she is in her *Apogæa*, because she is farthest from the Earth; or generaly more Vapors, because she is then more strong and Præpoent, as the Sun in his *Apogæum*; or from some unknown Influence or Power. But however those Vapors which she causeth do not make that whole Body of Water which floweth and refloweth in Tides; nor doth every part of that whole Body of Water pass to the extremitys of the Floud and Ebb; but only the Rivers in their Fall above the Floud of the Sea are supplied by the Vapors, which causeth the Impulse of the whole Undulating Body of Water, as farr as the Ebb; like the two Handles of a Saw, in sawing forward and backward, not very farr, though the Saw be never so long: for plainly the Waters in the Floud toward the Rivers are not much more Salt, nor in the Ebb toward the Ocean much more Fresh, but in the middle, where they meet, and where a proportionable overplus of the River Water so caused by the Vapors doth mingle with the Seawater. Also he plainly intimateth, that as some of the Luminarys are manifestly Motive, so they are all, in that he doth not distinguish between them: and it is elswhere expressly said of the Starrs generaly, that they militate in their Courses, or Originaly, Paths: and if the Fixed Starrs do move Uniformly together (which is the last *Residuum* of the antient Error and Opinion of their Fixation) yet however, according to their Various Positions in the Æther, they must move Difformly in Time, in that very Uniformity in Position; and either in Position or Motion, or both, they are all Asymmetrous: certeinly no known Motion of any of them is Commensurable with the Motion of the whole Æther, according to which we assigne the Proper Day Natural to be, as I have said, fower and twenty hours neither more nor less, otherwise they should not be *for Signes, and for Seasons, and for Days, and for Years*, and all the Variations therof;

therof. And though many of them be farr greater then the Earth, yet they all move about it, becauſ they were made to give Light upon it, which they could not do at ſuch a diſtance, unleſs they were ſo great. And their Number is Innumerable unto us, and perhaps not fewer then of the Hoſt of *Iſrael* in the Wildernes; nor of that which *Joab* gave up to the King *Rotunde* before he had completed it; or of that which he ſtill proceeded to complete, untill he was hindred by the Plague. Nor doth *Moſes* lay any foundation of Judicial Aſtrology, which is expreſsly condemned by Scripture. Again in the Works of the Fifth and Sixth Day he deſcribeth the Original Generations of Fiſhes, Fowls, and Beaſts, and moſt truly termeth them Living, and afterward calleth their Bloud the Bloud of Life, which our Learned Doctor hath lately diſcovered to be a moſt proper expreſſion, and citeth that Text in confirmation of his Diſcovery; wheras formerly the Heart was termed *Primum vivens, & ultimum moriens*: I have been informed by a Phyſician my Neighbor, that having diſſected an old Toad ſo farr as that he had taken out the Heart, and afterward ſtepping aſide, before he returned again, the Toad had crept away into his Garden, where he found it alive, and that it ſo lived ſome conſyderable time. In the laſt of all the Works of Creation, that is, of the little World, Man, he diſcovereth a new World of Myſterys not only as Man is the whole Scale of Nature, and as there was another Proper Creation of his Intellective Spirit, but alſo how he was made in the Image of God, in order unto *Jeſus Chriſt*, God-Man, who, by the Aſſumption of the Human Nature into the Divinity, did alſo ſuperadd and unite to this Scale of Created Nature the Creating Nature, God himſelf; which is the *Anacephaleoſis*, or Reduction of the Finite Creation to the Infinite Creator. And I ſhall deſire any Naturaliſt ſeriouſly to conſyder this Natural Repreſentation of the *Meſſiah*, as he is thus the Infinite Completion and Conſummation of Nature itſelf, and Perfection of the Univerſ, and ſo the Mediator both of Creation, and Redemption; that thereby God the Creator *might gather together in one all things in Chriſt, both which are in Heaven, and which are in Earth, even in him*: for ſo indeed *Chriſt* hath united in himſelf not only the Intellective Spirit of Man, but alſo his Body, yea the very Matter therof; as it is ſaid, *In him dwelleth all the fulnes of the Godhead Bodily*. Wherefore all men ſhould confes and acknowledg *Without controverſy great is the*

Myſtery

Mystery of Godlines, God was manifest in the Flesh. And these are two most admirable and amazing Contemplations, which every man may have of himself, that he is a Microcosm or Module of the whole Created World, and a Nature which in *Jesus Christ* is also Immediately united to the Creator, and Divine Nature. And now I desire any to reflect on this whole History of the Creation of the World, which *Moses* hath described; and consyder with himself from whom he could derive all this Philosophical and Theological Learning, (or as it was said, *Whence hath this man this Wisedom?*) but only from God the Author of all Entity and Verity: for though indeed he *was learned in all the Wisedom of the Egyptians*, yet probably that was only such Improvement of some Human Arts and Sciences, as they, and the *Chaldæans*, and *Gracians*, and other Heathens, have made therof, and not that Knowledg of these Fundamental and more profound Veritys, which he delivereth. Certeinly *Thales*, *Pythagoras*, *Plato*, and others, who purposely travelled into *Egypt* to be instructed in their Learning, brought back none such into *Greece*: and I suppose, that whatsoever the antient *Egytian* Wisedom or Learning was, they received it first from *Joseph* and the *Hebrews*, as other Nations since from *Moses* and the *Jews*; though indeed they seem only to have received or reteined some scattered Notions, Fragments, or *Cento's* therof, mingling them with their own Fansys and Errors; which doth also plainly appear in all Pagan Theology. But as our Savior said, even untill his time; *Salvation is of the Jews*; so also was their Philosophy derived from this Fountain of Divine Truth, either by Scripture, or Tradition: for Language and Letters are the Vehicles of all that Human Science, which we therefore call Literature; and undoubtedly the *Hebrew* Language was the first and Original, and it is said expresly, that before the Confusion, *the whole Earth was of one Language*, which was Hebraical, as is proved by the *Hebrew* names of *Adam*, *Chevah*, *Sheth*, and the rest; and so also it is said, that unto *Eber* or *Heber were born two Sons*, *the Name of the one* Peleg, *becaus in his days the Earth was divided*, *and his brothers Name was* Jocktan: whereby it also appears that the *Hebrew* Language continued after the Confusion in the family of *Heber*, from whom it is so denominated; and as *Shem* is called *the father of all the children of* Eber, that is, of his Sacred Linage, so also

from him, the *Jews* who were of that Linage, were called *Hebrews*; as *Abraham* their Father is therefore called an *Hebrew*. Thus as *Noah*, and his Family only, were preserved from the common Deluge, so *Heber*, and his family only, were preserved from the common Confusion of Languages: and with the Original Language, the Original Knowledg which was delivered from their Ancestors, did continue in that Family; and probably the rest of Mankind, with the Language, lost also all those acquired Notions and Terms, or at least could make no common use therof for want of a common Language; and so in Scripture we read of no great Actions performed by those mighty Builders in many years after: and they are said to have been thereby scattered over all the Earth; wherof such who were neerest to *Heber*, in *Chaldaa*, and *Syria*, began to learn again both Language and Knowledg from him; as may appear by their very litle different Dialects. Whence afterward the *Chaldaans* by their Conquests, and the *Syrians*, or *Phanicians*, (or *Syrophanicians*, as they are sometimes called) by their Navigations, conveied Learning, both by Land, and Sea, to other more remote Nations. And that which doth most confirm me heerin, is that in *America* (wherof the Inhabitants were fartheſt removed from the *Hebrews*) when it was first discovered, no such Literature was found, though otherwise they were Naturaly as Ingenious as other men, and so might have invented Human Arts and Sciences themselvs, as well as others, if they had not been so derived from this one Fountain. And as the Books of *Moses* are the most antient of any now extant, so I chalenge all Mankind to convince this History of Creation of any falsity or Popularity otherwise then as I have declared, in any Sentence, or Syllable therof, which he hath so truly and accurately expressed, that comparing it with all the Discoverys of Nature which have been since made by any others, I may term his Sentences, Antient Novelrys, and all their Discoverys Novell Antiquitys: and I must acknowledg my self to have been as much instructed by a more Critical Inspection of Scripture, as by any Curious Inspection of Nature itself; though I esteem both very needfull, as they are mutual Explanations one of the other. Thus by the Card and Compass of the Divine Word I have adventured to sail round about the Philosophical World, and if any therefore shall call me a Scriptu-

rist,

rist, or *Ecclesiastes*. I should willingly accept it, if the Wisest of men had not assumed that Title, wherof I am not worthy to partake. However from this *Specula* of Truth, and by the Light therof, we may discern the Errors of any others, who have wandred from this right Way. As first the *Jews* themselvs, after the Captivity, being mingled among the Heathen, learned their works, and the very Corruptions and Prevarications of that Divine Truth, which the *Gentiles*, as I have shewed, before borrowed from the *Hebrews*, in respect of whom all other Nations might be rightly termed Barbarous. And from this *Colluvies* flowed all their Sects of *Sadducees*, *Pharisees*, and others, and that Rabbinical Philosophy, which hath perverted the Simplicity of the Text by Cabbalistical and Allegorical Interpretations: and as they make all Scripture such, becaus some parts therof, as the Visions of Prophets are indeed Allegorical, so others would Interpret them also Literaly as in the Vision of the New *Jerusalem*, becaus it is described Quadrate or Square Hieroglyphicaly to express the Immobility therof, some have fansied the Superæther not to be Spherical; though they might as well affirm it to be Metalline or Gemmeous, and of no larger extent then according to the Measure of so many Furlongs. But Philosophers have subverted the very foundation, and laid several others instead therof: and yet most Christians will build upon them, rather then acquiesce in the only true and Divine Philosophy: though I also acknowledg, that if others be reduced to this fundamental System of the World, very much Natural Knowledg may be gained from them, and that they may help to make a fair Superstructure. Nor have I laid down any *Theses* which I do not prove not only by Authority of Scripture, but also by Philosophical Reason, and Senfible Experiment; and if any dissent from me, I shall also desire him to oppugn me with all the same Weapons, and as solid and firm; for if they be feint and feeble, they will bend and recoil on him that useth them. As in that famous Controversy concerning the Motion of the Earth, if any should urge against me that Text, *which shaketh the Earth out of her place, and the Pillars therof tremble*, I should answer him, that if I wanted a Text to prove the contrary Truth, this alone might suffice: for both by it, and the Context, it plainly appears, that it is spoken of a violent Commotion of the Earth by God in his anger, and evi-

dently

dently imports that otherwise the Earth Naturaly resteth, and hath a Place of Rest. And so their chief Reason to prove the Earth Mobile becaus it is Magnetical (which I have granted) doth as plainly prove the Immobility therof, as I have shewed. And the Sensible Experiment of an Arrow shot upright in a Ship sailing, is a meer Fallacy; though the Motion of the Ship, and of the Archer in it, while he dischargeth it, may indeed caus some little Impuls that way, in the very discharge, which so directeth it. But certeinly no man can believ that a Fly removing from an Horses head in travelling doth follow him with any less *Nisus* or labor, by reason of any such Conjunct Motion, then another Fly which freshly pursues the Hors; for let an Hors that hath been washed in a River run swiftly on the Land, certeinly the Drops that fall from him will not follow him. There are many such fond Opinions and fooliſh Probations, which serv only to render Philosophy ridiculous. I am more confident of my *Theses*, and hope I have offered no such *Hypotheses*; but whatsoever they are, I submit them to the several Masters in the respective Arts and Sciences; and generaly all to learned Divines, whose complete Province it is also to inspect this Divine Philosophy, which God himself hath laid as the Foundation of Theology: and as he doth delight to intitle himself the Maker of Heaven and Earth, so *Jeremy* taught the Captive Jews that Chaldaike Sentence, *The Gods that have not made the Heavens and the Earth, even they shall perish from the Earth, and from under these Heavens*, to discriminate the only true God from all Idols: nor do I remember that any Heathenish Religion did ever ascribe the Creation of the World to any of them, nor indeed acknowledg any Proper Creation. Wherefore since Errors in Philosophy are so dangerous in Divinity, Theologists should assert the *Genesis* of Creation, as well as the *Exodus* of Redemption: as all the Sects of Græcian Philosophers did joyn Natural with Moral Philosophy. Certeinly Theology only can teach us the right use and improvement of Natural Knowledg, that is, to Glorifie God, and benefit Mankind: and doth specialy admonish us that we should not so highly prize Curious and Costly *Perierga*, or any vain Philosophy or Knowledg which only puffeth, and edifieth not: for indeed whosoever doth terminate in a Speculative Contemplation of the World, is as much a Worldling, as any Ambitious, Covetous, or Voluptuous men, who seek a satisfaction therin.

VIII. Let

VIII. Let all men therefore praiſ and glorify their Creator, who hath made this whole World, and all things therin, in Order, Meaſure, and Weight; not only in all their own particular Natures, but in the Univerſ, and Polity therof, ſince every man is himſelf a Created Module, and *Idea* both of the Creation, and of God the Creator; who as a *Melior Natura*, was made to repreſent God to all Inferior Creatures in his Dominion over them, and them unto God in his Immediate Subordination unto him: Wherefore as all the Works of God do praiſ him with the *Echo* of his own Goodnes, and the whole Globe as a Cymbal doth ſound forth his praiſes, ſo ſhould we ſing and chant them out with Oral Voice, and Mental Underſtanding. And thus as bleſſed Angels, who in Heaven behold the face of God, continualy cry unto him, *Holy, Holy, Holy, is the Lord of Hoſts*; ſo we beholding the Reflections therof in the *Speculum* of Created Nature, ſhould ſubjoin in Conſort, *the whole Earth is full of his Glory.* And more ſpecialy we ſhould praiſ him for our own Human Nature, which is the Summ of all the reſt, and Completion of both the Senſible, and Intelligible Worlds, quartering all the Familys of Nature in the Eſcutcheon of our Humanity: whereby we of all others are moſt obliged to this Divine Service, which is the very End of Creation, and Divine Goodnes therof. And every particular man ſhould thus Perſonaly reflect on himſelf, becauſ he is alſo an Abſtract of Humanity,; ſinging the Doxology of the Divine Pſalmiſt. *I will praiſe thee, for I am fearfully and wonderfully made, and that my Soul knoweth right well; my Subſtance was not hid from thee, when I was made in ſecret, and curiouſly wrought in the loweſt parts of the Earth. Thine Eys did ſee my Subſtance, yet being Imperfect, and in thy Book were all my Members written; which in continuance of time were faſhioned, when as yet there was none of them.* Thus I was Created through the moſt free Grace of my Creator, and was not what I now am long ſince the World was made, and which might ſtill have continued without me; who am a very Inconſyderable and Inſignificant Portion of Mankind, among all the Innumerable Millions of men, who have been before me, are now with me, and ſhall be after me, and yet as much concerned in my Creator, and he as particularly regarding me, as if there were none other man in the World. And as I, before I was, ſo my Parents, or any others,

could not deſigne or deſire any ſuch being for me, nor foretell or imagin what I ſhould be; but only my Divine Father, who did ſet down and preſcribe in his Book of Eternity the *Idea* of my Perſonality, and whole *Compoſitum*, and accordingly formed me in my Mothers Womb, molding my Body, the Tabernacle of my Soul, by a Vegetative Plaſtical Virtue, and producing my Senſitive Spirit out of the common Clay, and loweſt part of the Earth, inſpired into it my Intellective Spirit, as a Light Incenſed that ſhall never be Extinguiſhed, an Intelligence Ingenerable, and Incorruptible for ever. And now I am my ſelf, and not another, nor ever ſhall be any other then my ſelf, and ſo am put into the preſent poſſeſſion of my own everlaſting Being; though my Soul living and dwelling in this Mortal Body, for this ſhort ſpace of a Temporary Life, hath this ſmall Segment of its Eternity ſet out and appointed to be the ſole opportunity of gainiug my everlaſting Welbeing: and the Intellectual and Spirkual Welbeing of my Soul is only the Union and Communion therof with my Infinite Creator, which is the true *Apotheoſis* of Intellective Spirits. In which Original State of Divine Perfection Human Nature was firſt Created, but, by the Apoſtacy and Defection of our firſt Parents, did again ſink down into the Mortality of the Body, and the ſelf-confounded *Chaos* of the Soul. And now, O Mankind! admire and adore for ever the Infinite and Incomprehenſible Glory of God, and Myſtery of his Spiritual Kingdom of Redemption farr exceeding all the Glory of his Natural Kingdom of Creation, which was only the foundation or Scene of the other, being ſo made in order therunto, and wiſely conſyder, how God, Infinite in himſelf, look'd through this Finite World, as a Bubble of Diaphanous Air; computing all Creatures therin, only as ſo many *Cyphars*, which though more or fewer, greater or leſs, before or after, in or among themſelvs, yet all ſignify the ſame Nothing in Divine Account; neither adding to, nor diminiſhing from the Infinity of their Creator. And therefore from all Eternity, before the Foundations of the World were laid, he deſigned and decreed to Inveſt his own Son, the Uncreated, Eſſential, and Intrinſecal Image of himſelf, with the Created, Artificial, and Extrinſecal Image of our Humanity; and therin with the Univerſal Nature of the Created World. By whom Finite is thus united to Infinity, and Mutable to Immutability, and in whom God Infinitely and Immutably enjoieth himſelf, in the full Embraces

both

both of his Essence, and Operations. And this is that new and better Creation, which shall endure for ever: wherof it is also said, as of the first Creation. *In the Begining was the Word, and the Word was with God, and the Word was God. The same was in the Begining with God. All things were made by him, and without him nothing was made that was made.*

And now I praise thee, I bless thee, I adore thee, Lord, God, Creator of Heaven and Earth! for thine own Uncreated Glory, Eternaly Immanent in thy self, and for the Transient manifestations therof in and to thy Creatures. And as I admire thine own Infinite Incomprehensibility, so also all those Finite Incomprehensibles in Nature, and all the Comprehensibles therof, which may be known by us; for whatsoever we do or can truly know of thee, or thy Works, is most excellent; and so is all that we cannot know. And I thank thee for the discovery of the Initial Creation, and Original Confabrication of the World, by thy Word; and the retrospective Revelation therof to thy Servant *Moses*: and for any Revelation of that Primitive *Apocalyps* to me thy most unworthy and unable Servant, by the Illumination of thy Divine Spirit. And now I beseech thee to revele it more and more to the whole World, that we may all know and acknowledg the only true *Genesis* of the World, and thee the Creator, who art both the Author, and End therof. And wherin I am Ignorant, still teach thou me, or wherin I have Erred, discover it to others: that neither thy Divine Truth may be dishonored by my Human Infirmity, nor any honor therof ascribed to my Infirm Humanity: but that we all, may always, and in all things, Laud and Glorify the most Holy Name of thee, the Infinite *Jehovah*, and Creator, through *Jesus Christ*, the *Messiah*, our Redeemer; whom to Know is Life Eternal, *Amen*.

FINIS.

Preface to ye world ——————————— p 1

yt yt world is finite p 16
yt god is infinite - p 24
of heavn & earth p 31

